TECHNICAL LITERATURE

OPERATOR, AND MANTAINER MANUAL

(INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST)

FOR

WATER DISTIRUBTION AND WASTEWATER MANAGEMENT SYSTEM (WDWWMS)

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WDS RPSTL

WWMS RPSTL

GRAINGER PUMP RPSTL

U.S. ARMY MEDICAL MATERIEL AGENCY
SEPTEMBER 2005

This manual supersedes Version 5, dated 28 May 2004

U.S. ARMY MEDICAL MATERIEL AGENCY
SEPTEMBER 2005

PREFACE

Hospitalization is one of the major Army Medical Department (AMEDD) function areas. Under the Statement of Need, contained in the Operational Requirements Document (ORD), approved by Headquarters, Department of the Army on 4 February 2003, it states that “There is a need to improve the distribution of potable water and the removal of waste water from selected patient care and other areas of the Combat Support Hospital (CSH)”.

The system is a group of assemblages whose components, when assembled and used together, form a potable water distribution and wastewater management system for the CSH.

The water distribution portion I used to deliver potable water to hospital wards (intensive care, intermediate care, pre-op), central materiel supply, pharmacy, x-ray, blood laboratory, laboratory, emergency medical treatment, and the dental clinic. It is not intended to provide water to the laundry, food feeding, showers, or toilets.

The wastewater portion allows the transfer of wastewater from these same areas to holding areas.

Prior to the inception of this system, there was no satisfactory method for distribution potable water to and within core areas of the hospital. Water had to be carried and distributed manually in 5-gallon cans that was a labor intensive effort. In addition, there was a strong possibility of water contamination, if extreme care was not taken, when filling, handling and distributing water in cans.

This manual provides the operator and maintainer instructions for the Water Distribution and Wastewater Management System. This system comes in three basic configurations:

- Medical Force 2000 (MF2K) – 296 Beds
- Medical Re-Engineering Initiative (MRI) – 84 Beds
- Medical Re-Engineering Initiative (MRI) – 164 Beds

It is designed to be used for the Combat Support Hospitals (CSH) in the Corps and Echelons above Corps areas.

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedure, please let us know. Mail your letter or DA Form 2028 (Recommended Changes to Publications and Blank Forms) directly to: **Commander, U.S. Army Medical Materiel Agency, ATTN: MCMR-MMO-AL (WDSWWMS), 1423 Sultan Drive, Fort Detrick, Maryland 21702-5001**. A reply will be furnished to you.

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OPERATOR AND MAINTAINER INSTRUCTIONS
INCLUDING REPAIR PARTS AND SPECIAL TOOLS LIST (RPSTL)
FOR
WATER DISTRIBUTION AND WASTEWATER MANAGEMENT SYSTEM (WDWWMS)

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your memorandum and DA Form 2028 (Recommended Changes to Publications and Blank Forms) directly to: Commander, U.S. Army Medical Materiel Agency, MCMR-MMO-AL, 1423 Sultan Drive, Suite 100, Fort Detrick, Maryland 21702-5001. A reply will be furnished directly to you.

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HOW TO USE THIS MANUAL

This manual is designed to help assemble, operate, disassemble, and maintain the Water Distribution and Wastewater Management System (WDWWMS). Listed below are some of the special features of this manual which will help to locate and use the information needed.

A front cover index gives a quick reference to chapters and sections that will be used often.

The appendices are located at the end of the manual. They contain a reference guide to other manuals, a lost of components and basic issue items and a repair parts and special tools list.

Safety precautions.

In addition to the text, there are illustrations to aid in the identification of components.

Read warnings and cautions before performing any procedure.

CHAPTER 1
WATER DISTRIBUTION AND WASTEWATER MANAGEMENT SYSTEM (WDWWMS)

1.1 SCOPE. This technical manual contains instructions for assembly, operation, checks and corrective maintenance, disassembly and storage of the Water Distribution and Wastewater Management System (WDWWMS).

1.2 DESCRIPTION OF SYSTEM. The WDWWMS is a group of assemblages (sets) whose components, when assembled and used together, form a pressurized, potable water distribution and wastewater management system for the Combat Support Hospital (CSH).

1.2.1 *Configurations*. This system is designed in three authorized standard configurations and one operational variant.

1.2.1.1 Medical Force 2000 (MF2K). The MF2K configuration was designed to support a 296-bed CSH contained both a hospital unit base (HUB) and hospital unit surgical (HUS). It was further designed to support a limited split-based operation of the HUB and HUS operating separately. The current sets that form this configuration are:

LIN	Nomenclature	NSN	UA
W53055	Water Distribution Set, Hospital, MF2K - 2003	6545-01-507-7170	N322
W33068	Wastewater Management Set, Hospital, MF2K	6545-01-434-9624	1223
W49603	Waste Water Augmentation Set, Hospital, MF2K	6545-01-435-6013	1224
W53373	WDWWMS Maintenance Set, Hospital, MF2K	6545-01-480-6913	1225

1.2.1.2 Medical Re-engineering Initiative (MRI), 84-Bed. With the advent of the MRI concept for the CSH, the hospital was segmented into and 84-bed and 164-bed division. This configuration was designed to support an 84-bed CSH. In addition to the basic sets to support the 84-bed hospital, a capability was added to allow the hospital to tie into a Force Provider water distribution system. The current sets that form this configuration are:

LIN	Nomenclature	NSN	UA
W53123	Water Distribution Set, 84-Bed	6545-01-491-4732	M584
W49853	Wastewater Management Set, 84-Bed	6545-01-491-4728	M585
W42371	WDWWMS Maintenance Set, MRI, 84-Bed	6545-01-491-4698	M586
W53623	Water Distribution Connection Set	6545-01-507-2140	1226

1.2.1.3 Medical Re-engineering Initiative (MRI), 164-Bed. The last authorized configuration of this system was designed to support a 164-bed CSH. The capability to tie into a Force Provider water distribution system has also been added to this configuration. The current sets that form this configuration are:

LIN	Nomenclature	NSN	UA
Z00133	Water Distribution Set, 164-Bed	6545-01-502-4969	M784
Z00134	Wastewater Management Set, 164-Bed	6545-01-502-4992	M785
Z00135	WDWWMS Maintenance Set, MRI, 164-Bed	6545-01-502-4991	M786
W53623	Water Distribution Connection Set	6545-01-507-2140	1226

1.2.1.4 Operational Variant, 44-Bed. An operational variant of the authorized configurations was designed to support current operations. NSNs have been assigned to these sets only for tracking purposes. The sets are:

Nomenclature	NSN	UA
Water Distribution Set 44-Bed (2002)	6545-01-500-1723	3222
Wastewater Management Set 44-Bed (2002)	6545-01-500-1690	3223
Maintenance Set WDWWMS 44-BED	6545-01-528-1677	3224

1.2.2 *Purpose of the System.* This system was designed to provide a pressurized, potable water distribution and wastewater evacuation and management capability to the CSH. Under the former concept of water distribution concept for a field hospital, the unit was forced to rely on 5-gallon water cans and water trailers.

1.3 MAINTENANCE FORMS AND PROCEDURES. Department of the Army (DA) forms and procedures used for equipment maintenance will be those prescribed by DA PAM 738-50, The Department of the Army Maintenance Management System (TAMMS) and this Technical Manual (TM).

1.4 CORROSION PREVENTION AND CONTROL (CPC).

1.4.1 Corrosion Prevention and Control (CPC) of Army materiel is a continuing concern. It is important that any corrosion problems with this system be reported so that the problem can be corrected, in present systems, and improvements can be made to prevent the problem in future system builds.

1.4.2 While corrosion is typically associated with rusting of metals, it can also include deterioration of other materials such as rubber and plastic. Unusual cracking, softening, swelling, or breaking of these materials may be a corrosion problem.

1.4.3 If a corrosion problem is identified, it can be reported using Standard Form (SF) 368 (Product Quality Deficiency Report (PQDR)). Use of keywords such as corrosion, rust, deterioration, or cracking will ensure that the information is identified as a CPC problem. The form should be submitted to the address specified in DA PAM 738-750 and Commander, U.S. Army Medical Materiel Agency, MCMR-MMT-L, 1423 Sultan Drive, Suite 100, Fort Detrick, Maryland 21702-5001.

1.5 REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR). If your system needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you don't like about your system. Let us know why you don't like the design. Put it on an SF 368 (PQDR). Mail it to Commander, U.S. Army Medical Materiel Agency, MCMR-MMT-L, 1423 Sultan Drive, Suite 100, Fort Detrick, Maryland 21702-5001. We will send you a reply.

1.6 QUALITY ASSURANCE/QUALITY CONTROL (QA/QC). Quality Assurance/Quality Control Procedures used will be those enforce by the local Commander.

1.7 LIST OF ABBREVIATIONS/DEFINITIONS. Abbreviations and definitions used in this manual are listed in Appendix A.

1.8 SYSTEM CHARACTERISTICS, CAPABILITIES, AND FEATURES. These are identified and explained in subsequent chapters and in the affiliated technical publications, as outlined in Appendix B.

1.9 LOCATION AND DESCRIPTIONS OF MAJOR COMPONENTS. These are identified and explained in subsequent chapters and in the affiliated technical publications, as outlined in Appendix B.

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CHAPTER 2
WATER DISTRIBUTION SET (WDS)

INTRODUCTION

2.1 General

2.1.1 This chapter describes the components as well as the assembly, operation, and disassembly of the Water Distribution Sets (WDS). The combination of hoses, fittings, gauges, and valves provides maximum flexibility in setting up the sets. This flexibility will enable you to set up the sets in almost any configuration that will accommodate the hospital's mission.

2.1.2 The Water Distribution Sets come in three basic authorized configurations depending on the type of Combat Support Hospital (CSH) to which it is authorized.

- Water Distribution Set, Hospital, DEPMEDS (MF2K, 296-Bed)
- Water Distribution Set, MRI, 84-Bed (CORPS)
- Water Distribution Set, MRI, 164-Bed (Echelons Above CORPS)

2.1.3 The basic components of these three configurations are identical; the only difference is the number or components authorized.

2.1.3.1 The Water Distribution Set, Hospital, DEPMEDS (MF2K, 296-Bed) (LIN: W53055) comes in three basic versions.

2.1.3.1.1 The Water Distribution Set, Hospital, DEPMEDS (MF2K, 296-Bed) – 2000 (NSN: 6545-01-435-6014). This is version of the set comes with Storage and Retrieval Materiel System (NSN: 3990-01-449-1997), for the storage of fittings; and Reel Assembly, Hose (NSN: 3990-01-449-3850), for the storage of hoses.

2.1.3.1.2 The Water Distribution Set, Hospital, DEPMEDS (MF2K, 296-Bed) – 2002 (NSN: 6545-01-435-6014). In this version the Storage and Retrieval Materiel System and the Reel Assembly Hose has been replaced by a Skip Box, Materiel Handling (NSN: 3990-01-505-5922).

2.1.3.1.3 The Water Distribution Set, Hospital, DEPMEDS (MF2K, 296-Bed) – 2003 (NSN: 6545-01-507-7170). In this version the Pump Unit, Centrifugal (65 GPM) (NSN: 4320-01-440-4421) has been replaced with the Pump Unit, Centrifugal (NSN: 4320-01-506-4459).

2.1.3.2 The Water Distribution Set, 84-Bed (NSN: 6545-01-491-4732) (LIN: W53125) (UA M584) is designed to support the 84-Bed MRI CSH at the CORPS level of care.

2.1.3.3 The Water Distribution Set, 164-Bed (NSN: 6545-01-502-4969) (LIN: Z00133) (UA M784) is designed to support the 164-Bed MRI CSH at the echelons-above-CORPS level of care.

2.1.4 There is also a 44-Bed configuration designed to support contingency operations. (NSN: 6545-01-500-1723) (UA 3222) This configuration is not authorized by the ORD and is only built and fielded to support the theater of operations.

2.1.5 One of the main reasons for the water distribution set is to control infection and communicable diseases in the hospital. It is essential that the water be of the highest possible quality.

NOTE

Coordinate early for preventive medicine personnel to inspect, take samples from, and analyze the water distribution system. Advise hospital personnel that the water from the system cannot be considered potable until certified by preventive medicine personnel.

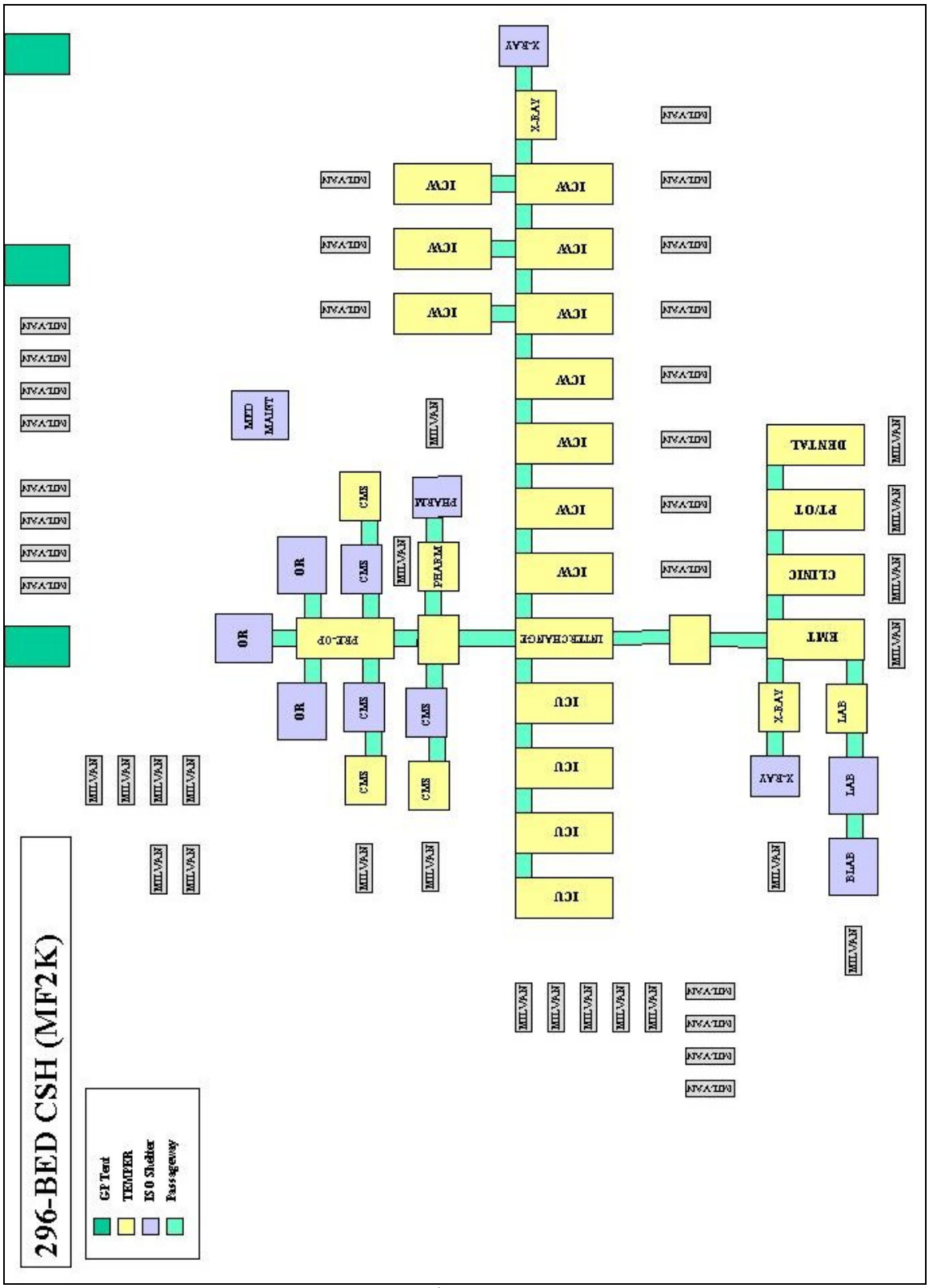

Figure 2-1
296-Bed CSH (MF2K) Recommended General Layout

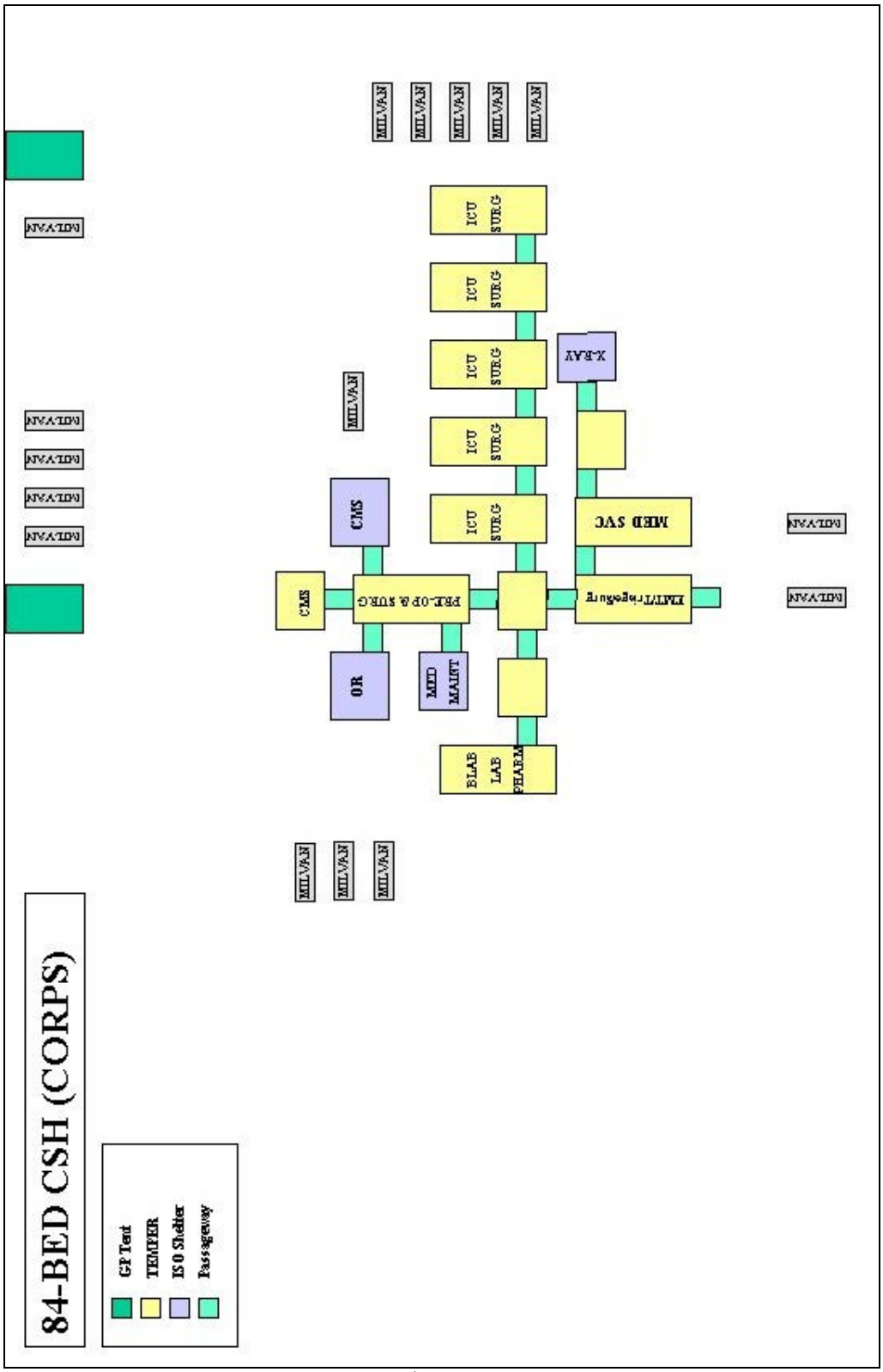

Figure 2-2
84-Bed (MRI) Recommended General Layout

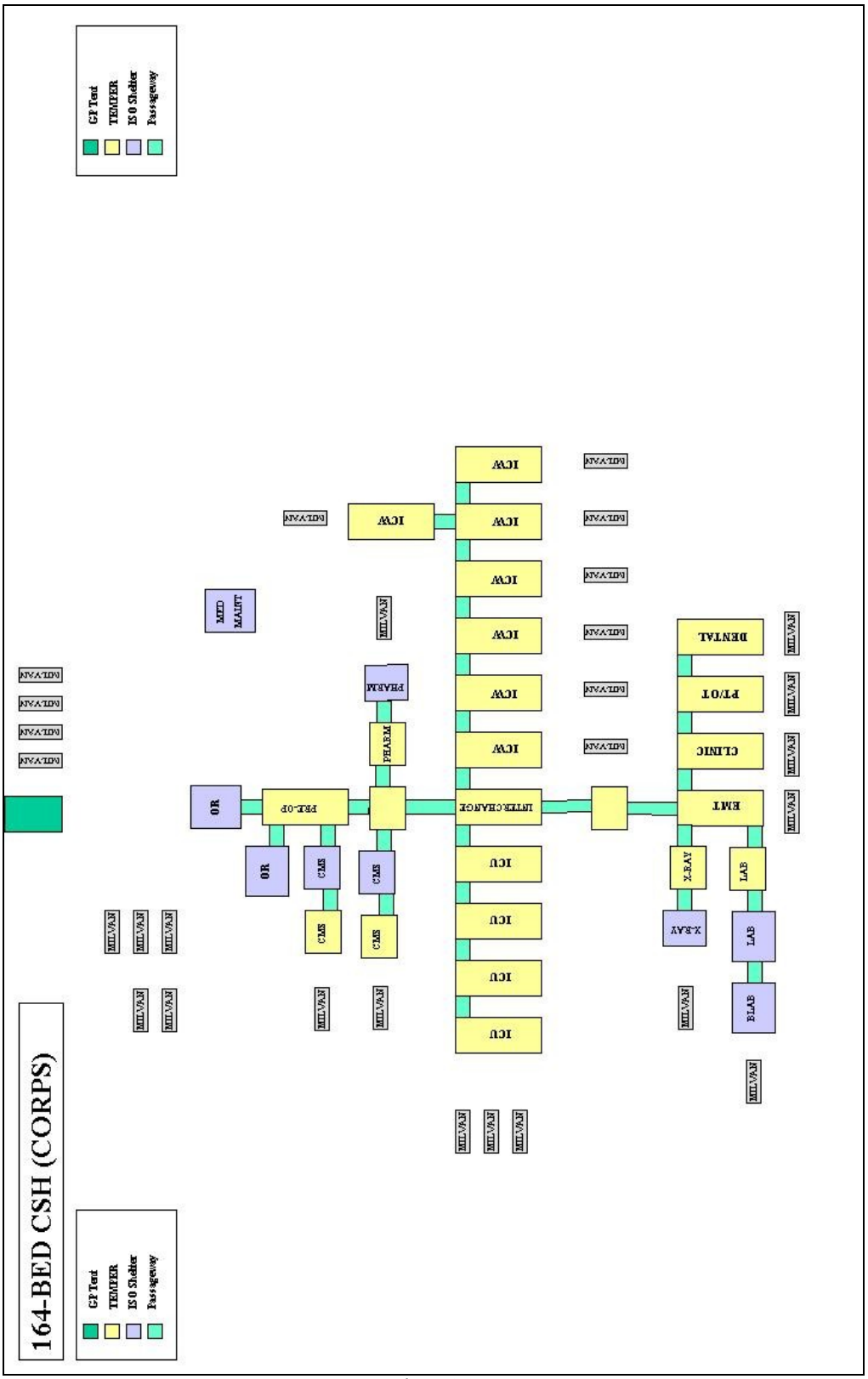

Figure 2-3
164-Bed (MRI) Recommended General Layout

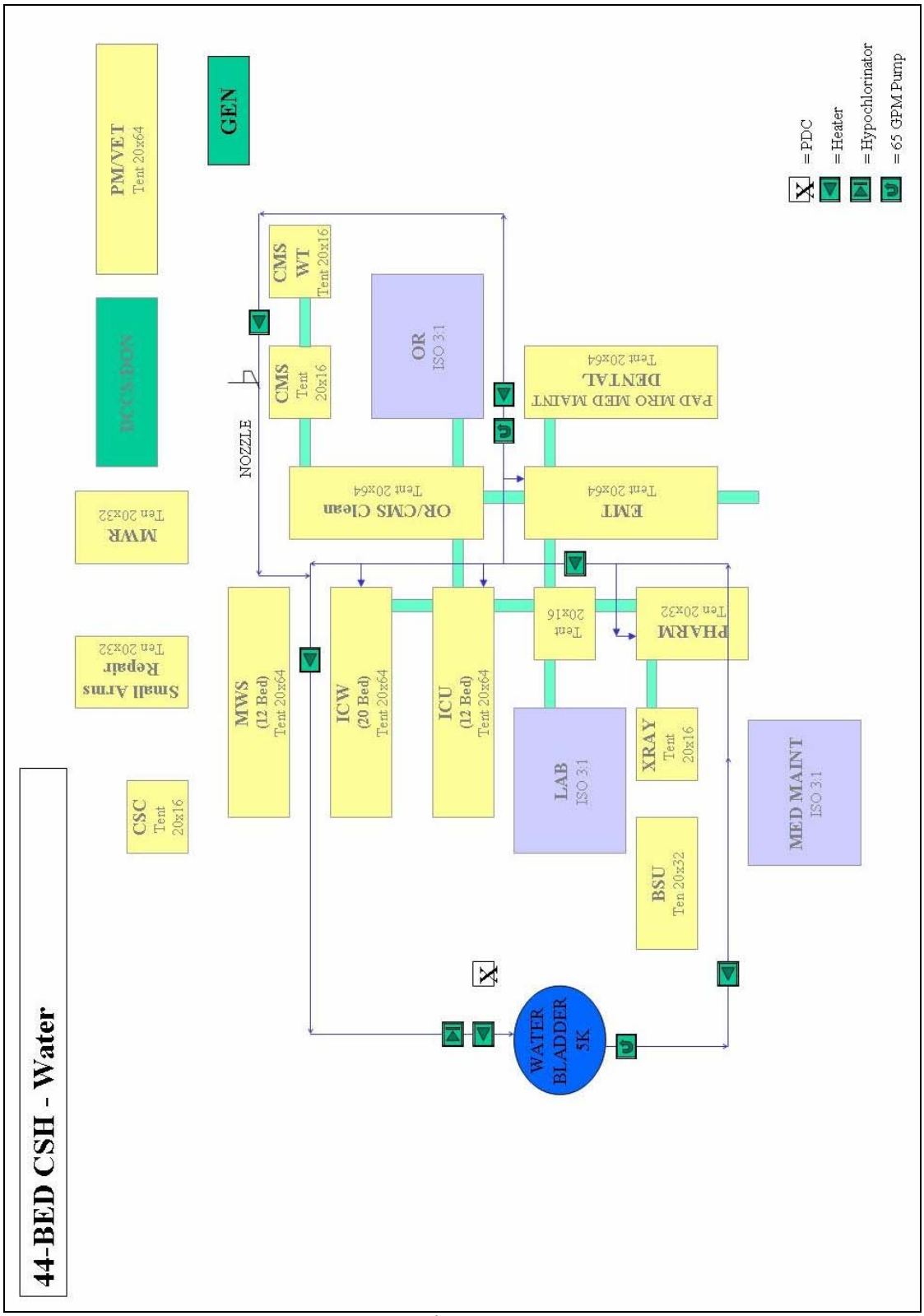

Figure 2-4
44-Bed Recommended General Layout

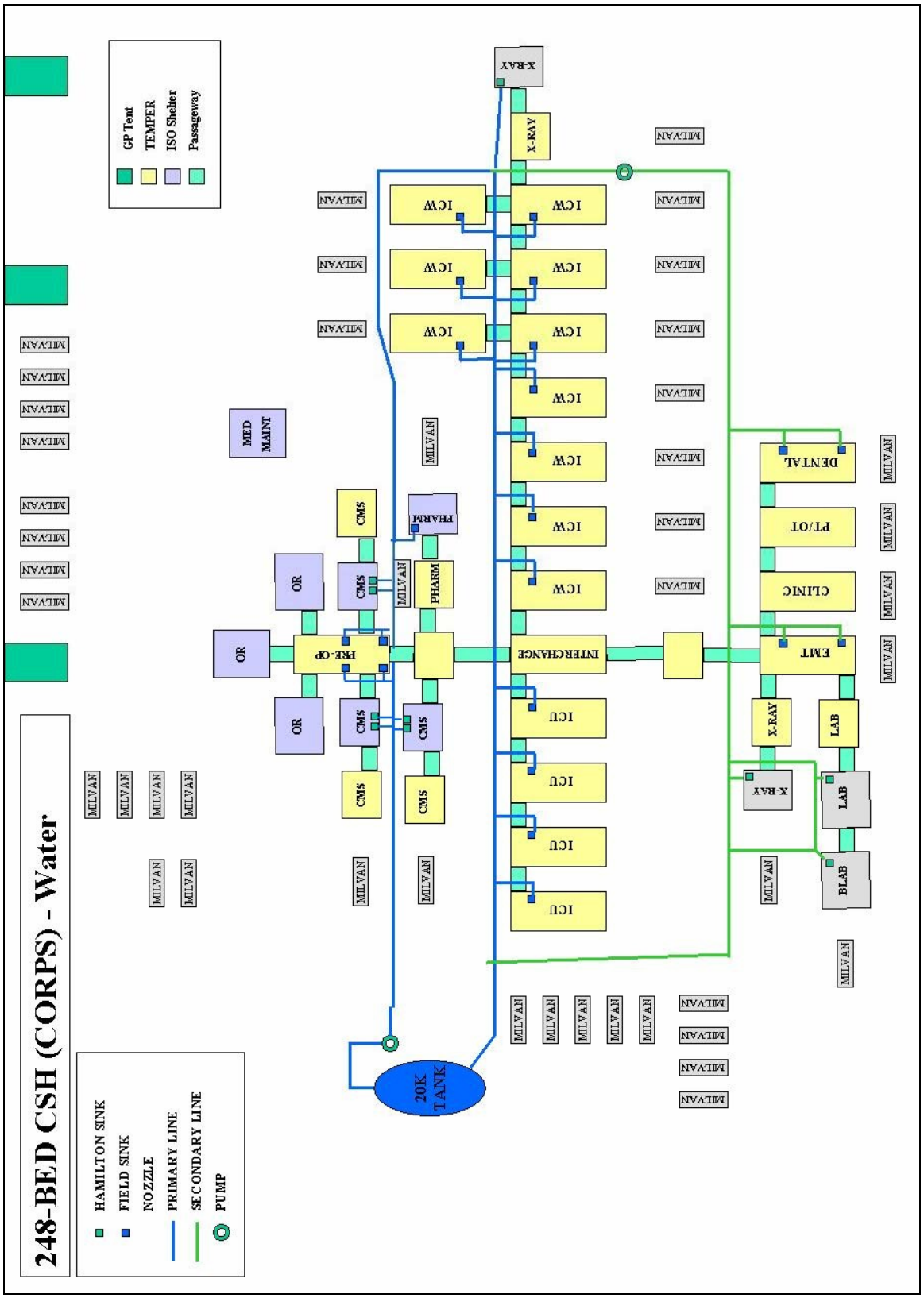

Figure 2-5
296-Bed CSH (MF2K) Recommended WDS Layout

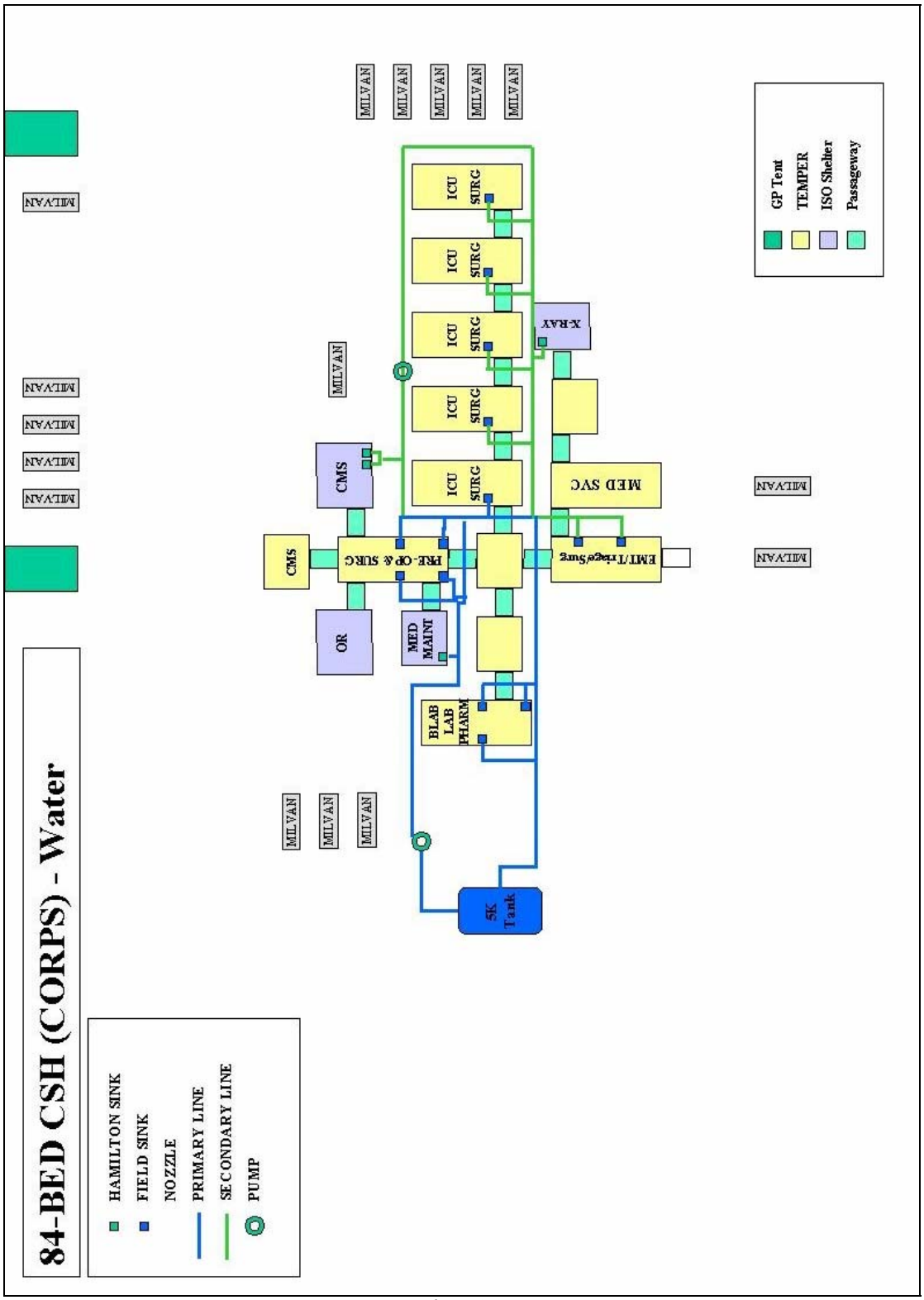

Figure 2-6
84-Bed (MRI) Recommended WDS Layout

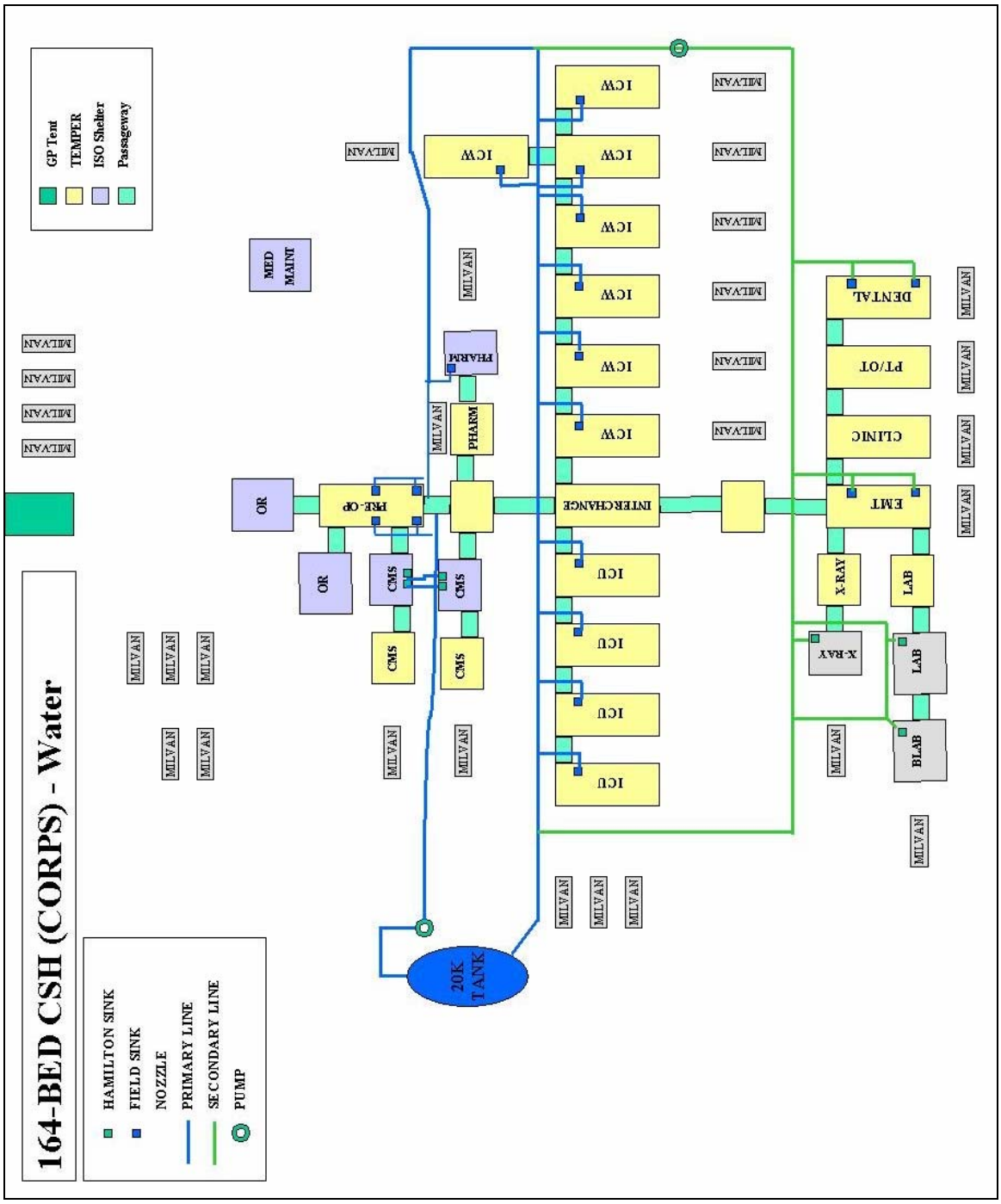

Figure 2-7
164-Bed (MRI) Recommended WDS Layout

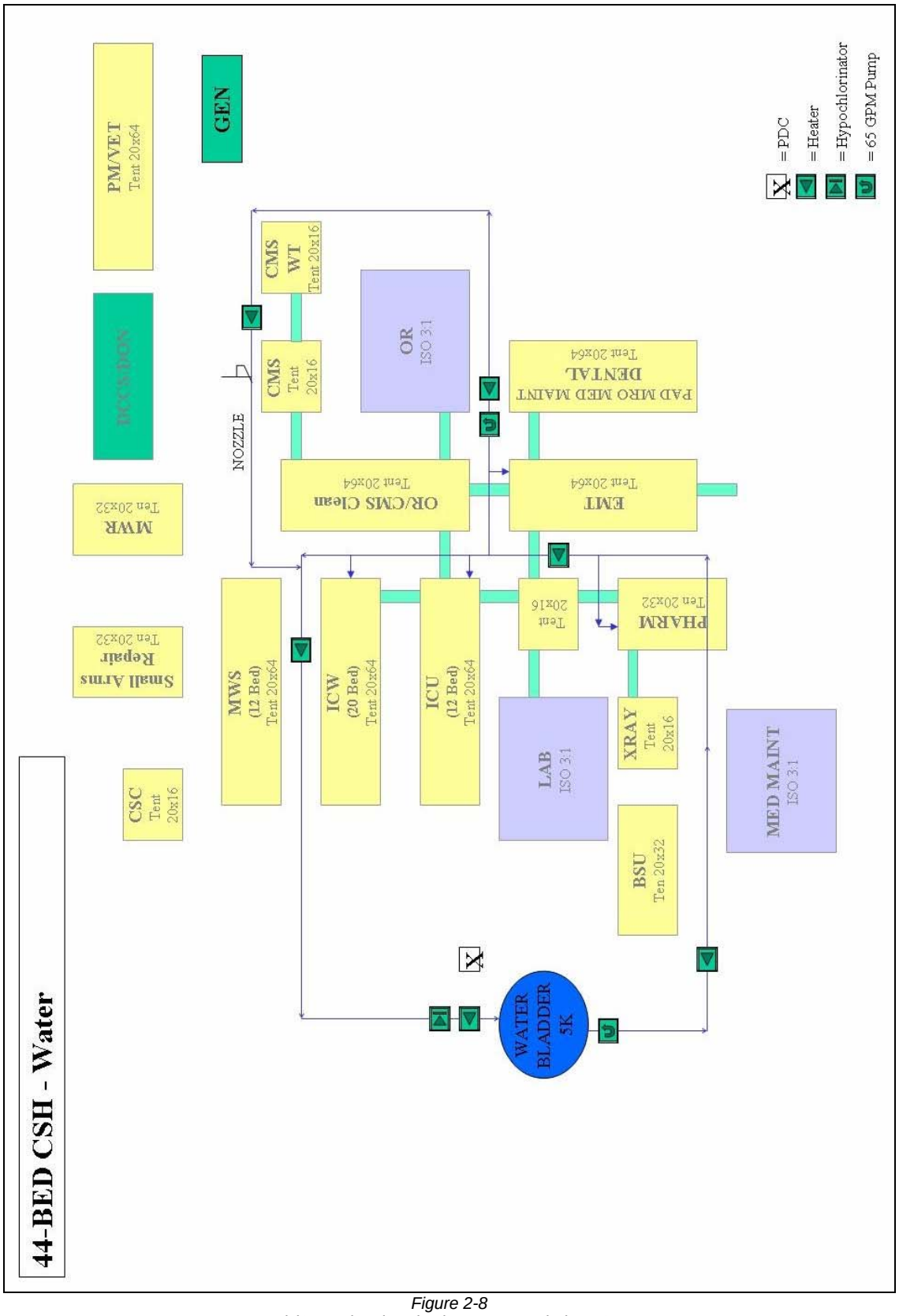

Figure 2-8
44-Bed (Operational Variant) Recommended WDS Layout

COMPONENTS

2.2 Components

2.2.1 *Cam-Lock Connections*. With one exception, every connection in the water distribution system is cam-lock. That one exception is the field sink adapter, which is discussed later in this manual. Cam-lock is a quick connection system that requires no special training or tools. There are no threads. You simply insert the male end of the fitting into the female end of another fitting and pull the levers back to lock the two parts together. There are, however, precise steps in making and breaking this connection. These steps are discussed later in this manual.

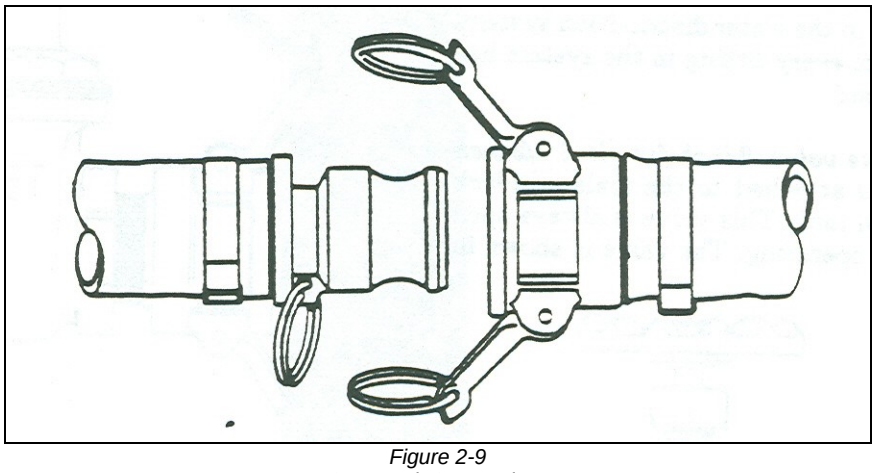

Figure 2-9
Cam-Lock Connections

2.2.2 *Water Storage Tanks*. Units will be authorized the following types and quantities of water tanks.

Types

- LIN T12938, Tank Fabric Collapsible, 20,000 Gallon Capacity
- Tank Fabric, Collapsible, 5,000 Gallon
- LIN T19033, Tank, Fabric Collapsible, 3,000 Gallon Capacity

Quantities

LIN	T12938		T19033
NSN	5430-01-406-0507	5430-01-506-1999	5430-01-170-6984
	20K Gal	5K Gal	3K Gal
MF2K	1	0	1
MRI 84	0	1	0
MRI 164	1	0	0
44-Bed	0	1	0

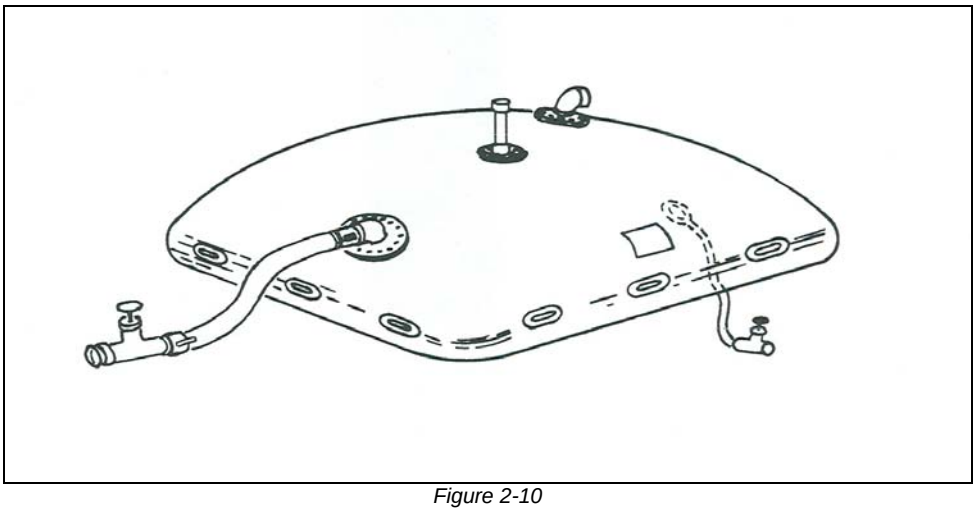

Figure 2-10
Tank, Fabric, Collapsible, 20,000 Gallon

Figure 2-11
Tank, Fabric, Collapsible, 20,000 Gallon
(laid out on ground)

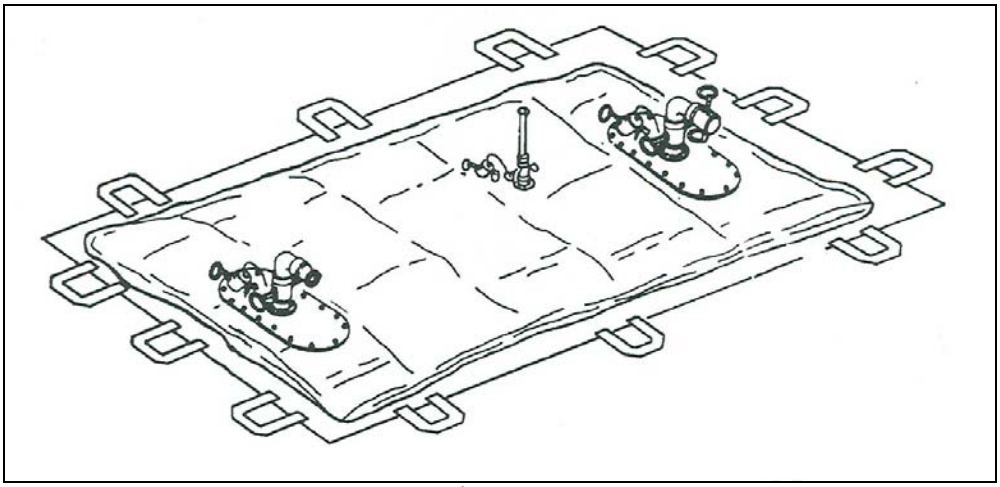

Figure 2-12
Tank, Fabric, Collapsible, 5,000 Gallon

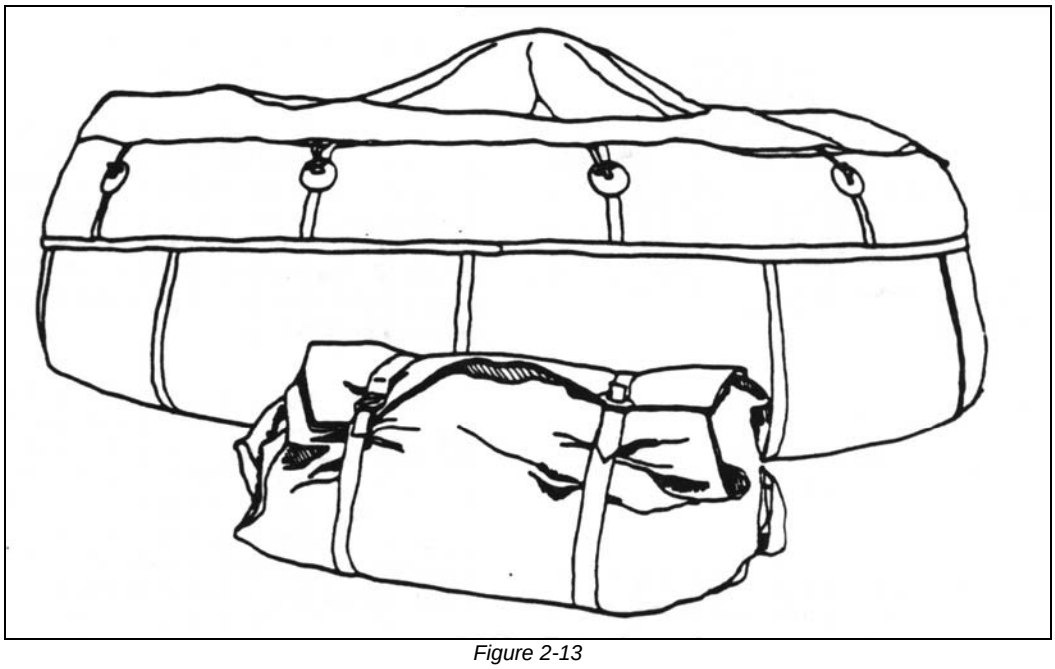

Figure 2-13
Tank Assembly, Fabric, Collapsible, 3,000 Gallon
(Onion Type)

2.2.3 *Pump Assembly, Centrifugal.*. The water pump in this set, either NSN: 4320-01-440-4421 or NSN: 4320-01-506-4459 has a 220 volt, 3 phase, totally enclosed, fan-cooled, electric motor. Each pump has a Class "L" connector (NSN 5935-01-086-6421, PN MS90556C32413P) capable of interfacing with the DEPMEDS electrical distribution system. Each pump has a male and female 1½-inch cam-lock fitting.

Pump Requirements

- MF2K WDS – 2 each
- MRI, 84 Bed, WDS – 2 each
- MRI, 164 Bed, WDS – 3 each

One pump will serve the primary water distribution of the hospital, and the other(s) are used a secondary line(s) to maintain pressure. For the MF2K configuration, a third pump is located in the Waste-Water Augmentation Set. This third pump will be used in the event that the Hospital Unit, Surgical (HUS) and the Hospital Unit, Base (HUB) operate independently.

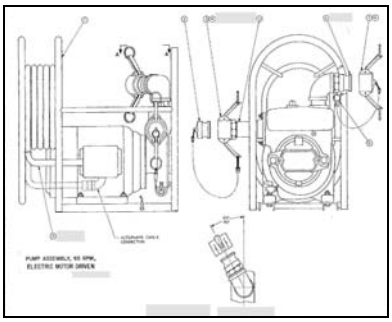

Figure 2-14
Pump Assembly, Centrifuge

CAUTION
Two persons are required to lift or carry a water pump.

2.2.4 *Hoses*.

2.2.4.1 All hoses in the water distribution systems are tan in color. Each hose has a blue stripe running its length indicating use for potable water.

2.2.4.2 When sections of hose are connected, they are bulky and heavy. To avoid injury, limit the amount of hose carried to 60 feet. The set comes with either hose reels that can be rolled or skip box, materiel that can be stacked and moved with a forklift. This is an effective way to move large amount of hose. **DO NOT DRAG THE HOSE**. You will damage it and the connections.

2.2.4.3 The hoses that are contained within the Water Distribution Set are:

2.2.4.3.1 Hose Assembly, Nonmetallic (NSN: 4720-01-438-8338) (PN: 13225E9136-14) 5-feet in length, 1-inch diameter

2.2.4.3.2 Hose Assembly, Nonmetallic (NSN: 4720-01-175-5958) (PN: 13225E9136-12) 10-feet in length, 1-inch diameter

2.2.4.3.3 Hose Assembly, Nonmetallic (NSN: 4720-01-177-3714) (PN: 13225E9136-13) 20-feet in length, 1-inch diameter

2.2.4.3.4 Hose Assembly, Nonmetallic (NSN: 4720-01-438-8337) (PN: 13225E9136-15) 50-feet in length, 1-inch diameter

2.2.4.3.5 Hose Assembly, Nonmetallic (NSN: 4720-01-438-8336) (PN: 13225E9136-17) 5-feet in length, 1½-inch diameter

2.2.4.3.6 Hose Assembly, Nonmetallic (NSN: 4720-01-438-7779) (PN: 13225E9135-9) 10-feet in length, 1½-inch diameter

2.2.4.3.7 Hose Assembly, Nonmetallic (NSN: 4720-01-438-8343) (PN: 13225E9136-9) 10-feet in length, 1½-inch diameter

2.2.4.3.8 Hose Assembly, Nonmetallic (NSN: 4720-01-438-8341) (PN: 13225E9136-10) 20-feet in length, 1½-inch diameter

2.2.4.3.9 Hose Assembly, Nonmetallic (NSN: 4720-01-438-8335) (PN: 13225E9136-18) 50- feet in length, 1½-inch diameter

2.2.4.3.10 Hose Assembly, Nonmetallic (NSN: 4720-01-140-6288) (PN: 13225E9136-4) 20-feet in length, 4-inch diameter

2.2.5 *Fitting and Valves*. There are numerous fittings and valves in the water distribution system. With one exception, every fitting in the set has cam-lock connections.

2.2.5.1 Valve, Gate, 2-inch female, 1½-inch male (NSN: 4820-01-440-8306) (PN: 13229E7178). This valve is attached to either the female cam-lock of the Water Tank, Fabric Collapsible, 3,000 gallon (NSN: 5430-01-170-6984), or to the female cam-lock of the adapter for the Water Tank, Fabric Collapsible, 5,000 gallon (NSN: 5430-01-506-1999), or Water Tank, Fabric Collapsible, 20,000 (5430-01-406-0507).

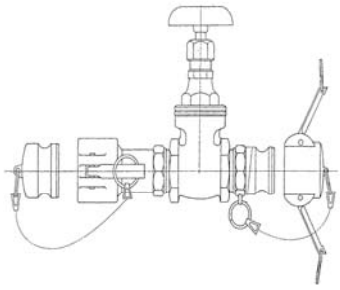

Figure 2-15
Valve, Gate, 2-inch female, 1½-inch male

2.2.5.2 Valve, Gate, 1½-inch female, 2-inch male (NSN: 4820-01-440-8302) (PN: 13229E7177). This valve is attached to either the female cam-lock of the Water Tank, Fabric Collapsible. 3,000 gallon (NSN: 5430-01-170-6984), or to the female cam-lock of the adapter for the Water Tank, Fabric Collapsible, 5,000 (NSN: 5430-01-506-1999), or Water Tank, Fabric Collapsible, 20,000 gallon (5430-01-406-0507).

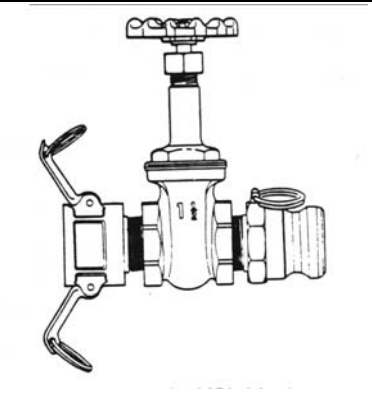

Figure 2-16
Valve, Gate, 1½-inch female, 2-inch male

2.2.5.3 Valve, Globe, 1½-inch female, 1½-inch male. (NSN: 4820-01-440-8765) (PN: 13229E7169). This valve is attached to the 1½-inch loop, immediately after the beginning of a 1-inch loop. It is also used when multiple water tanks are arranged in parallel. In this application, this valve controls the rate of flow in the system.

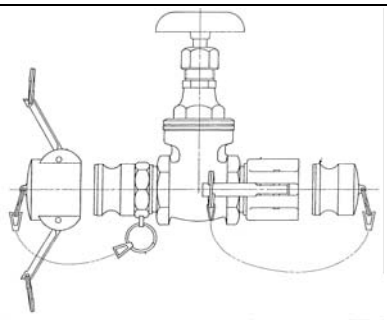

Figure 2-17
Valve, Globe, 1½-inch female, 1½-inch male

2.2.5.4 Valve, Gate, 1-inch female, 1-inch male (NSN: 4820-01-440-7798) (PN: 13229E7167). When used with individual water users, such as field sinks and nozzles, these valve controls the rate of flow. It is also used at the beginning of secondary loops and long one-way water lines. Used this way, repairs or changes in the secondary loops can be made without interrupting water supply to the rest of the hospital.

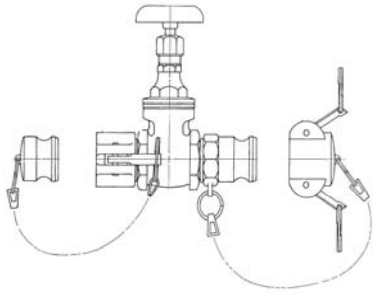

Figure 2-18
Valve, Gate, 1-inch female, 1-inch male

2.2.5.5 Valve, Check, 2-inch male, 1½-inch female. (NSN: 4820-01-440-5919) (PN: 13229E7197). This is used on the side of the water tank to prevent back-flow of water into the system, which could contaminate the water supply or restrict operation of the water flow.

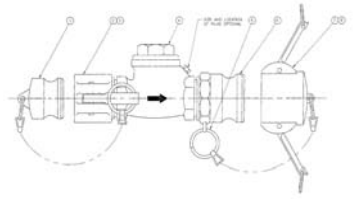

Figure 2-19
Valve, Check, 2-inch male, 1½-inch female

2.2.5.6 Tee Assembly, Quick Disconnect, 1½-inch female, 1½ inch male, 1-inch male. (NSN: 4730-01-440-4609) (PN: 13229E7172) This fitting is used at each place where the one-way feeder lines branch off to the individual users, such as Central Material Supply (CMS), pharmacy, X-Ray, and laboratory. It is also used at the beginning and end of the secondary loop.

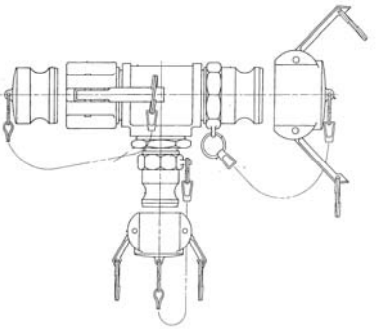

Figure 2-20
Tee Assembly, Quick Disconnect, 1½-inch female, 1½ inch male, 1-inch male

2.2.5.7 Tee Assembly, Quick Disconnect, 1-inch female, 1-inch male, 1-inch male. (NSN: 4730-01-440-4091) (PN: 13229E0361) This fitting allows connection of the individual users along secondary loops or long one-way lines.

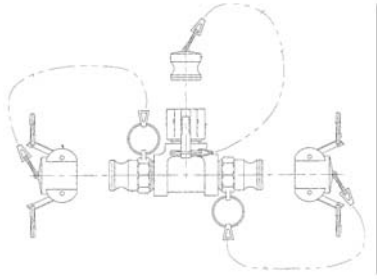

Figure 2-21
Tee Assembly, Quick Disconnect, 1-inch female, 1-inch male, 1-inch male

2.2.5.8 Tee Assembly, Quick Disconnect, 1½-inch female, 1½-inch male, 1½-inch male. (NSN: 4730-01-440-4633) (PN: 13229E7182) This fitting is used on the return side of the primary loop.

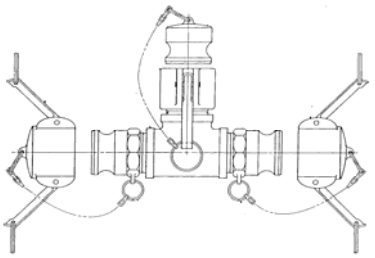

Figure 2-22
Tee Assembly, Quick Disconnect, 1½-inch female, 1½-inch male, 1½-inch male

2.2.5.9 Tee Assembly, Quick Disconnect, 1½ inch female, 1½ inch female, 1½ inch male. (NSN: 4730-01-440-4615) (PN: 13229E7181). This fitting is located between the water storage tanks and the pump when the water storage tanks are employed in parallel.

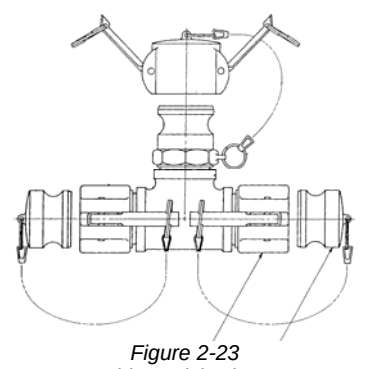

Figure 2-23
Tee Assembly, Quick Disconnect, 1½ inch female, 1½ inch female, 1½ inch male

2.2.5.10 Tee Assembly, Quick Disconnect, 1-inch female, 1-inch male, 1-inch male. (NSN: 4730-01-440-4613) (PN: 13229E7174)

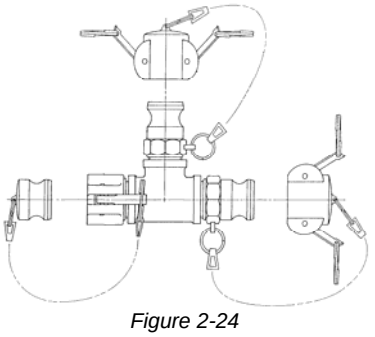

Figure 2-24
Tee Assembly, Quick Disconnect, 1-inch female, 1-inch male, 1-inch male

2.2.5.11 Tee Assembly, Quick Disconnect, 1½-inch female, 1-inch female, 1½-inch male. (NSN: 4730-01-440-4931) (PN: 13230E5716).

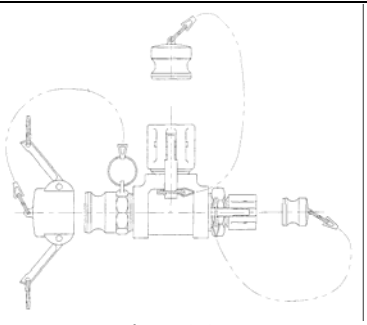

Figure 2-25
Tee Assembly, Quick Disconnect, 1½-inch female, 1-inch female, 1½-inch male

2.2.5.12 Tee Assembly, Quick Disconnect, 1-inch male, 1½-inch male, 1½-inch female (NSN: 4730-01-440-4933) (PN: 13230E5717).

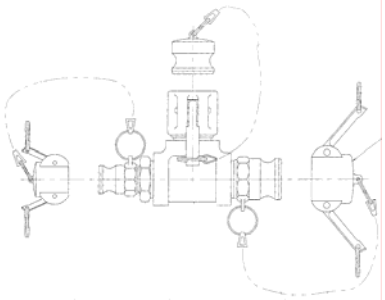

Figure 2-26
Tee Assembly, Quick Disconnect, 1-inch male, 1½-inch male, 1½- inch female

2.2.5.13 Tee Assembly, Reducing, 1-inch male, 1½-inch female, 1½-inch male. (NSN: 4730-01-440-4938) (PN: 13230E5715).

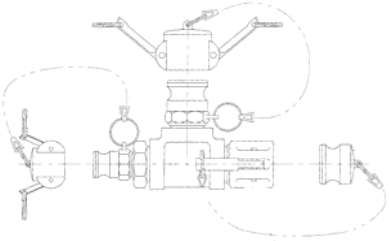

Figure 2-27
Tee Assembly, Reducing, 1-inch male, 1½-inch female, 1½-inch male

2.2.5.14 Tee Assembly, Quick Disconnect, 1½-inch female, 1½-inch male, ¼-inch male (NSN: 4730-01-487-3575). This fitting is used to connect the Hypochlorination Unit (NSN: 4610-01-435-4884) (PN: WAL-1031-96) to the primary water loop.

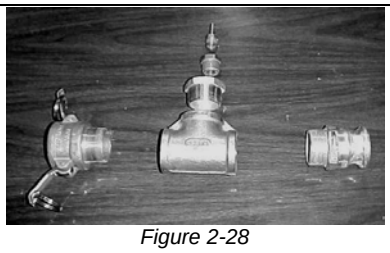

Figure 2-28
Tee Assembly, Quick Disconnect, 1½-inch female, 1½-inch male, ¼-inch male

2.2.5.15 Coupling Assembly, Quick Disconnect, 1-inch female, 1-inch female. (NSN: 4730-01-440-8569) (PN: 13229E7173). This is used either to connect two male ends of the hose loops or to connect the water lines to the Hamilton Sinks in the ISO containers.

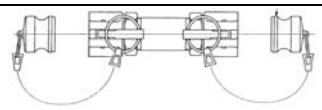

Figure 2-29
Coupling Assembly, Quick Disconnect, 1-inch female, 1-inch female

2.2.5.16 Plug, Quick Disconnect. (NSN 4730-01-415-6403) (PN: 13229E7170), sink adapter for the field sinks.

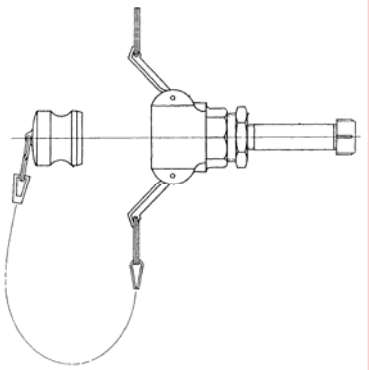

Figure 2-30
Plug, Quick Disconnect

2.2.5.17 Adapter, Straight Hose. (NSN: 4730-01-415-6420) (PN: 13229E7195), used with the Plug, Quick Disconnect (NSN 4730-01-415-6403) (PN: 13229E7170) to allow the connection of the adapter to the hose threads on the sink.

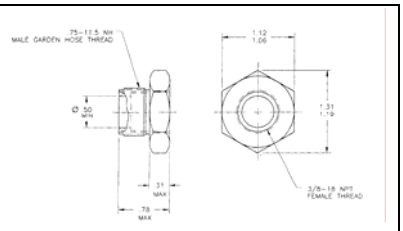

Figure 2-31
Adapter, Straight Hose

2.2.5.18 Reducer, Quick Disconnect, 4-inch female, 2-inch male (NSN: 4730-01-064-0560) (PN: AA59326XI-1-9). This fitting is used on the supply side of the Water Tank, Fabric Collapsible, 5,000-gallon or Water Tank, Fabric Collapsible, 20,000.

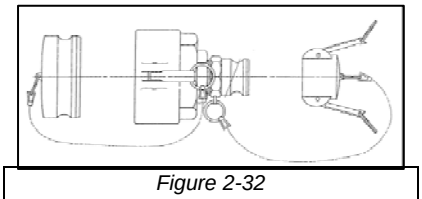

Figure 2-32
Reducer, Quick Disconnect, 4-inch female, 2-inch male

2.2.5.19 Reducer, Quick Disconnect, 2-inch female, 4-inch male (NSN: 4730-01-186-0821) (PN: AA59326XI-1-10). This fitting is used on the return side of the Water Tank, Fabric Collapsible, 5,000-gallon or Water Tank, Fabric Collapsible, 20,000.

2.2.5.20 Adapter Assembly, Quick Disconnect, 4-inch female, 1½ inch male (NSN 4730-01-445-5188) (PN: 13229E7190).

2.2.5.21 Reducer, Quick Disconnect, 1-inch female, 1½ inch male (NSN: 4730-01-499-8752) (PN: 3629). This fitting is used with the Heater, Water; 9,000 Watts (NSN: 4520-01-493-7423) (PN: 111739) for connect of the heater to the secondary water loop.

2.2.5.22 Reducer, Quick Disconnect, 1½-inch female, 1-inch male (NSN: 4730-01-499-8687) (PN: 3630) for connect of the heater to the secondary water loop.

2.2.5.23 Reducer, Quick Disconnect, 2-inch male, 1½-inch male (NSN: TBD, JCN: 4730NCM051075) (PN: 10358). This fitting is used on the Water Tank, Fabric Collapsible, 5,000-gallon.

2.2.5.24 Reducer, Quick Disconnect, 2-inch female, 1½-inch male (NSN: TBD, JCN: 4730NCM051076) (PN: 10359). This fitting is used on the Water Tank, Fabric Collapsible, 5,000-gallon.

2.2.5.25 Reducer, Quick Disconnect, 2-inch female, 1½-inch female (NSN: TBD, JCN: 4730NCM051077) (PN: 10360). This fitting is used on the Water Tank, Fabric Collapsible, 5,000-gallon.

2.2.6. *Other Components*:

2.2.6.1 Pipe Assembly, Potable Water (NSN: 4610-01-440-4086) (PN: 13229E7162). This vital component measures the water pressure in the distribution system. This gauge is placed at the end of the main loop. Its precise location depends on how the tanks are employed. **THE PRESSURE GAUGE IS FRAGILE.** When not in use, store it in Case, Medical, Supply and Instrument (NSN 6545- 01-499-5676, PN 02-1038), which is also a component of the WDS.

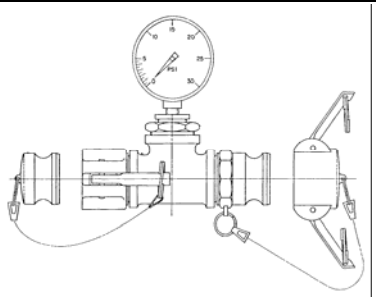

Figure 2-33
Pipe Assembly, Potable Water

2.2.6.2 Pipe Assembly, Potable Water. (NSN 4610-01-440-4088) (PN: 13229E7165). The water distribution system uses a flow meter that measures flow rates up to 100 GPM. It is placed at the end of the primary loop, immediately before the pressure gauge. **FLOW METERS ARE FRAGILE.** When not in use, store it in Case, Medical, Supply and Instrument (NSN 6545- 01-499-5676, PN 02-1038), which is also a component of the WDS.

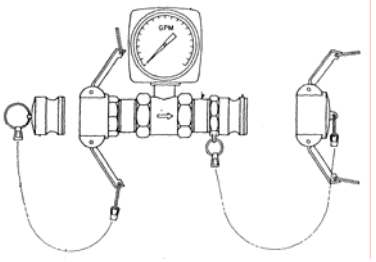

Figure 2-34
Pipe Assembly, Potable Water

2.2.6.3 Indicator Assembly. (NSN 4610-01-440-6834) (PN 13229E7163) This is an indicator assembly, sight liquid, to monitor water flow through the distribution system. When not in use, store it in Case, Medical, Supply and Instrument (NSN 6545- 01-499-5676, PN 02-1038), which is also a component of the WDS.

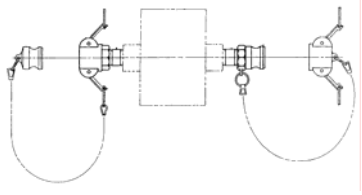

Figure 2-35
Indicator Assembly

2.2.6.4 Case, Medical, Supply and Instrument (NSN 6545- 01-499-5676) (PN 02-1038). This case is used to store the pressure gauges, flow meters, indicator assemblies, and other components requiring protection.

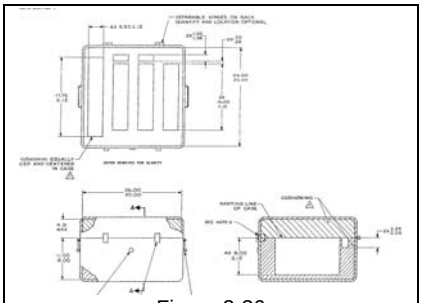

Figure 2-36
Case, Medical, Supply and Instrument

2.2.6.5 Stand Assembly, Distribution Nozzle. (NSN 4930-01-120-7426) (PN: 13225E9140). This tripod style assembly is used to suspend the Nozzle Assembly, Water (NSN 4610-01-440-6834, PN 13229E7168). This stand is also used in the Wastewater Management Set (WWMS) to suspend the Funnel Assembly (NSN 6545-01-434-9587, PN 13229E7229).

Figure 2-37
Stand Assembly, Distribution Nozzle

2.2.6.6 Nozzle Assembly, Water. (NSN 4610-01-440-6834) (PN 13229E7168) is provided to supply water to those parts of the hospital that is not connected t the water distribution system. Other uses for this nozzle are outlined in the principles of installation section of this chapter. ***(It should be remembered that the WDS is not designed to support the dining facility, bath, laundry. These activities are supported by their own water supply.)***

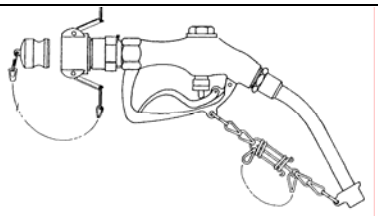

Figure 2-38
Nozzle Assembly, Water

2.2.6.7 Strainer, Sediment. (NSN 4730-01-440-7662) (PN 13229E7180) This fitting is used to drain sediment in the distribution system.

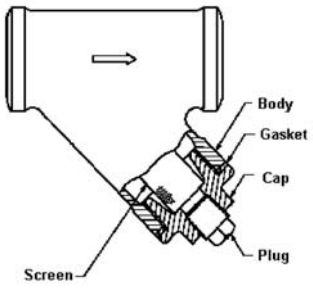

Figure 2-39
Strainer, Sediment

2.2.6.8 Pump Unit, Centrifugal (NSN 4320-01-440-4421 or 4320-01-506-4459) Two pumps are supplied with the WDS, MF2K and the WDS, MRI 84-Bed; and three with the WDS, MRI 164-Bed distribution sets. These pumps come with quick-disconnect fittings, and are capable of producing a 65 GPM water flow through the system. The Pump Unit, Centrifugal is discussed in more detail elsewhere in this manual.

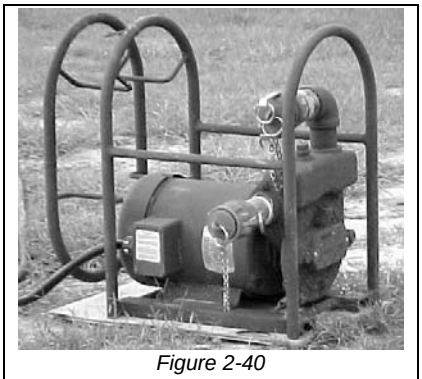

Figure 2-40
Pump Unit, Centrifugal

2.2.6.9 Hypochlorination Unit, Water Purification. (NSN 4610-01-435-4884) (PN WAL 1031-96) This item of equipment is designed to chlorinate the water within the water distribution system to help prevent bacterial and fungal growth within the hoses of the system. It is also designed to provide the capability to flush the water lines with chlorine. The substance used with the item is contained in the WDWWMS Maintenance Set for each configuration (Disinfectant, Sodium Hypochlorite (NSN 6810-00-242-4770, PN ASTM E 1229). The Hypochlorination Unit is discussed in more detail elsewhere in this manual.

Figure 2-41
Hypochlorination Unit, Water Purification

2.2.6.10 Heater, Water, 9,000 Watts. (NSN 4520-01-493-7423) (PN 111739). This item of equipment is designed to raise the ambient temperature of the water in the potable water distribution lines to above freezing. The heater is discussed in more detail elsewhere in this manual.

Figure 2-42
Heater, Water, 9,000 Watts

2.2.6.1.11 Reel Assembly, Hose. (NSN 4940-01-449-3850) (PN 13229E7186-2) This rack was designed for the storage of hoses used in the older versions of the water distribution sets. This was ONLY for the storage of water distribution hoses (tan colored). This has been replaced by the Skip Box, Materiel Handling (NSN 3990-01-505-5922, PN W-2-404-836-SP-SJF).

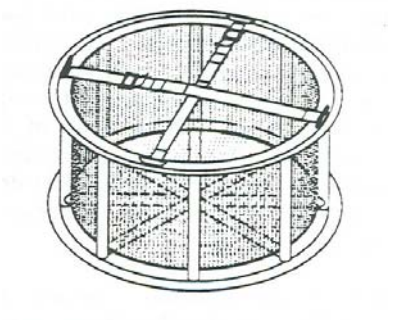

Figure 2-43
Reel Assembly, Hose

2.2.6.12 Storage and Retrieval Materiel System. (NSN: 3990-01-449-1997) (PN: 13229E7185-1) A sister component to the Reel Assembly, Hose, this device was designed to store fittings in the older versions of the water distribution sets. This has been replaced by the Skip Box, Materiel Handling (NSN 3990-01-505-5922, PN W-2-404-836-SP-SJF).

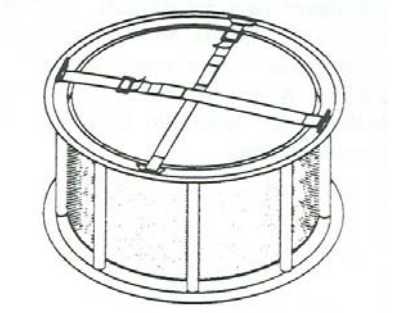

Figure 2-44
Storage and Retrieval Materiel System

2.2.6.13 Skip Box, Materiel Handling (NSN 3990-01-505-5922) (PN W-2-404-836-SP-SJF). This cage is used in the new versions of the water distribution sets for the storage of hoses and fittings used in the distribution set.

2.2.7 *Container, Cargo*. The WDS is functionally packed within a Container, Cargo (NSN: 8115-01-241-7524) (LIN: C13825).

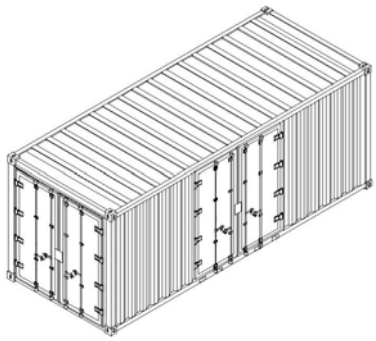

Figure 2-45
Container, Cargo
(MILVAN)

PRINCIPLES OF INSTALLATION

2.3. **General.** The water distribution system is intended to be as flexible in its layout as the DEPMEDS hospital itself. **THERE IS NO ONE CORRECT WAY TO SET UP THE WATER DISTRIBUTION SYSTEM.** The number of possible configurations is almost unlimited. The information within the paragraph provides the basic guidelines necessary in planning the layout of the system for your hospital. Like other systems, the layout must be planned in advance. Obtain a copy of the hospital layout plan as soon as possible.

2.3.1 Location of the Water Storage Tank(s). Positioning the water storage tank(s) is the most important decision in setting up the water distribution system. There are a number of factors to consider:

2.3.1.1 *Traffic Flow.* Trucks delivering water need access to the water storage tank(s).

2.3.1.2 *Electric power*. The pump, water heater, and hypo-chlorination unit will sit next to the water tank(s), and the pump needs electric power. The electric cable on the pump, and water heater is 40-feet long.

2.3.1.3 *Near the Primary Loop*. The water distribution system was designed for the primary loop to be near the highest concentration of ISO's.

2.3.1.4 *Sufficient Area*. The water distribution system comes with one of several water tanks, dependent upon configuration:

Capacity	Length (ft)	Width (ft)
3,000	13.8	13.8
5,000	16.3	16.3
20,000	27.2	27.2

2.3.2 Location of the Primary Loop. The ISO shelters make up the largest number of water users in the hospital. They also use a large amount of water. For these reasons, the primary loop should make its circuit around the highest concentration of ISO's. This approach also has the advantage of reducing the length of the primary loop, as well as reducing the amount of hose needed to connect the ISO's. The number of hospital components being used and their configuration dictates the length of the primary loop.

2.3.3 Secondary Loop(s). Secondary loops are normally installed instead of long one-way water lines. Water constantly moves in secondary loops. This greatly reduces the amount of stagnant water and the potential of bacterial growth. Flowing water stays cooler longer in the summer, and resists freezing in the winter.

2.3.4 Water Distribution Nozzles. Water distribution nozzles have several applications in the DEPMEDS hospital.

2.3.4.1 An important application of the nozzle is to supply water to those parts of the hospital that are not connected to the water distribution system. ***(It should be remembered that the WDS is not designed to support the dining facility, bath, laundry. These activities are supported by their own water supply.)***

2.3.4.2 The nozzle is an efficient way of filling the autoclaves. Place a nozzle with tripod near the CMS TEMPER. The hand valve on the nozzle is not very sensitive. For this reason, install a 1-inch female-male gate valve (PN 13229E7167) in the line leading to the nozzle. Use the gate valve to adjust the flow to the nozzle, or else you will have every-where except in the autoclave. Locate the valve 20-feet or so away from the nozzle to enable you to move it without also moving the valve.

2.3.5 Crossing Pedestrian and Vehicle Routes. Hoses should not cross vehicle routes. Hoses crossing pedestrian paths should be kept to a minimum. If a hose must cross a TEMPER, do so at a corridor, and use a hose protection channel. (Channel, Hose Protector [NSN 4720-01-440-4925, PN 13229E7176] for surface applications or Channel, Hose Protector [NSN 4720-01-440-4928, PN 13229E7175] for subsurface applications.)

ASSEMBLY

2.4. **Assembly.**

2.4.1 This paragraph provides some general guidelines and a few hard rules on how to assembly the system. You should be able to determine the layout of the water distribution system based on the information in the previous paragraphs.

2.4.2 Assembly the water storage tank(s). Assembly of the water storage tanks is dependent upon the type of tank used. Locate the tank to be used in accordance with the suggested placement as outlined in Figures 2-1, 2-2, 2-3, or 2-4 and the space requirement outlined in paragraph 2.3.1.4.

2.4.2.1 Tank Assembly, Fabric Collapsible (NSN 5430-01-406-0507) 20,000 Gallons.

2.4.2.1.1 Supply Fittings

2.4.2.1.1.1 Elbow 4-inch female x 4-inch male (is packed with the water tank)

2.4.2.1.1.2 Hose assembly, nonmetallic 4-inch x 20-feet (NSN 4720-01-140-6288, PN 13225E9136-4)

2.4.2.1.1.3 Reducer, Quick Disconnect, 4-inch female x 2-inch male (NSN 4730-01-064-0560 PN AA59326XI-1-9)

2.4.2.1.1.4 Valve, Gate, 2-inch female x 1½-inch male (NSN 4820-01-440-8306, PN 13229E7178)

2.4.2.1.2 Return Fittings

2.4.2.1.2.1 Elbow, 4-inch male x 4-inch female (packed with water tank)

2.4.2.1.2.2 Hose assembly, nonmetallic 4-inch x 20-foot (NSN 4720-01-140-6288, PN 13225E9136-4)

2.4.2.1.2.3 Reducer, Quick Disconnect, 2-inch female X 4-inch male (NSN 4730-01-186-0821, PN AA59326XI-1-10)

2.4.2.1.2.4 Valve, Gate, 1½-inch female x 2-inch male (NSN 4820-01-440-8302, PN 13229E7177)

2.4.2.2 Tank Assembly, Fabric Collapsible (NSN 5430-01-506-1999), 5,000 Gallon

2.4.2.2.1 Supply fittings

2.4.2.2.1.1 Reducer, Quick Disconnect, 2-inch female to 1½-inch male (JCN 4730NCM051076)

2.4.2.2.1.2 Valve, Gate (NSN 4820-01-440-8306, PN 13229E7178)

2.4.2.2.2 Return fittings

2.4.2.2.2.1 Reducer, Quick Disconnect, 2-inch female to 1½-inch female (JCN 4730NCM051077)

2.4.2.2.2.2 Valve, Gate (NSN 4820-01-440-8302, PN 13229E7177)

2.4.2.2.2 Tank Assembly, Fabric Collapsible (NSN 5430- 01-470-7380), 3,000 Gallon

2.4.2.2.2.1 Supply fitting: Valve, Gate (NSN 4820-01-440-8306, PN 13229E7178

2.4.2.2.2.2 Return fitting: Valve, Gate (NSN 4820-01-440-8302, PN 13229E7177

2.4.3 Attach the Valve, Check (NSN 4820-01-440-5919, PN 13229E7197) to the supply side of the tank.

2.4.4 Connect the hose between the Pump Assembly, Centrifugal and the water tank.

2.4.5 Lay out the primary loop, following the suggested guidance in figures 1-1, 1-2, 1-3 and 1-4. **DO NOT CONNECT THE HOSES YET. DO NOT REMOVE THE CAPS OR PLUGS.**

> Be aware of the requirements for fittings near the ISO walls that have water receptacles. Connections between hoses in the primary loop should occur near these points. Also be aware of other requirements for breaks in the loop, such as secondary loops, feeder lines to individual users, and nozzles to the CMS.

2.4.6 Lay out the 1-inch hose for the feeder lines between the main loop and the ISO shelters. This process more clearly defines the need for breaks in the primary loop and for fittings.

2.4.6.1 The CMS ISO has two water receptacles. All other ISO shelters have one water receptacle (except the operating room (OR), which has none). Figure 1-6 shows the connection between the main loop and the CMS ISO. The Hose (item D) is optional; you can omit it, or use any length (other than 50 foot) needed. Place the gate valve next to the tee (item f). Placing the

valve here enables you to disconnect an individual ISO without disrupting water supply to the rest of the hospital.

2.4.6.2 Figures 1-7 and 1-8 show two different methods to make the connection between the main loop and an ISO with one water receptacle. The hose (item b, figure 1-8) is optional; you can omit it or put any length you need. Figure 1-8 shows the same configuration with the hose omitted. Do not omit the gate valve (item b, figure 1-8). It allows you to disconnect an individual ISO without disrupting the water supply to the rest of the hospital.

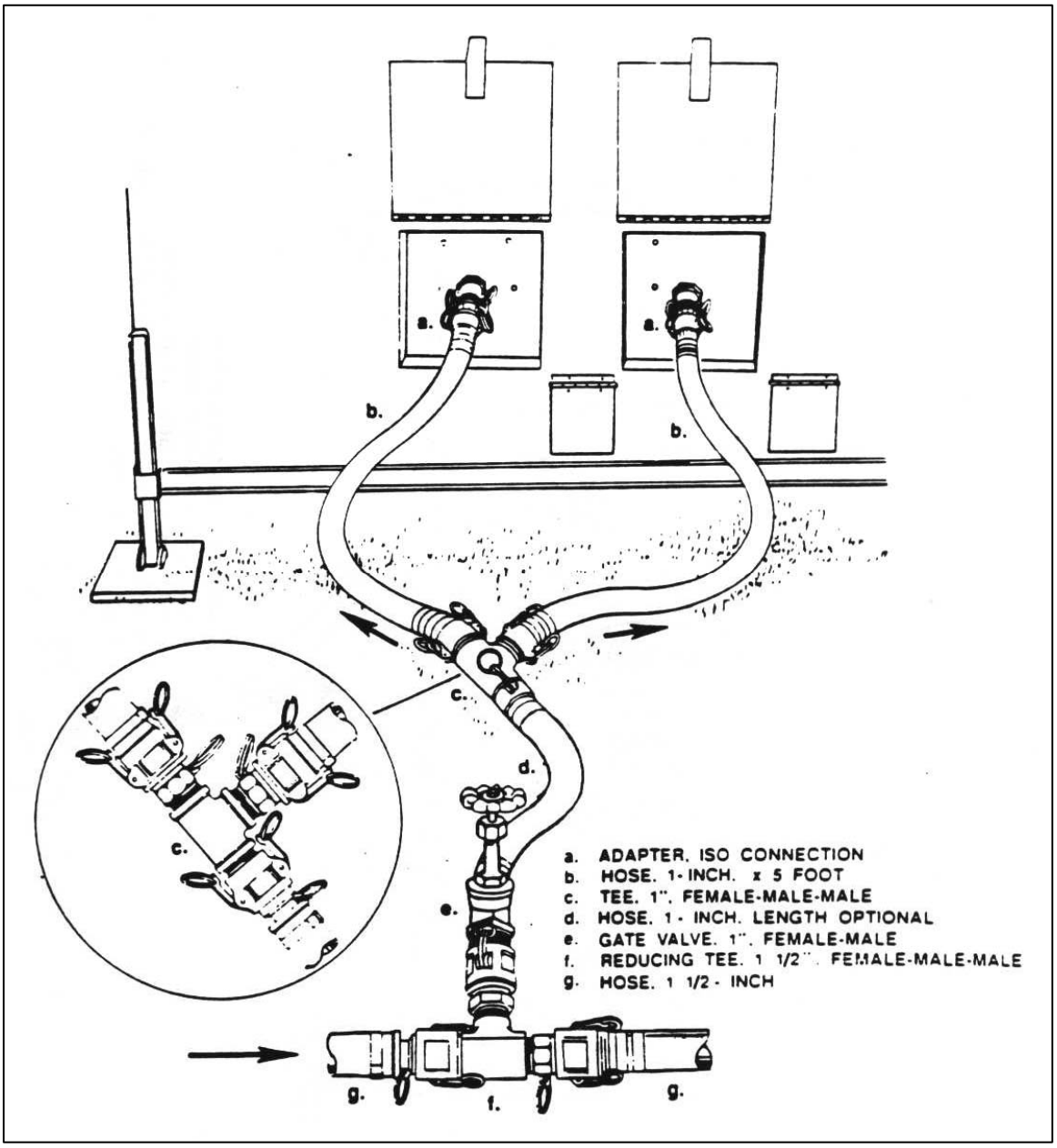

Figure 2-46
Water Hose Connection to the CMS ISO

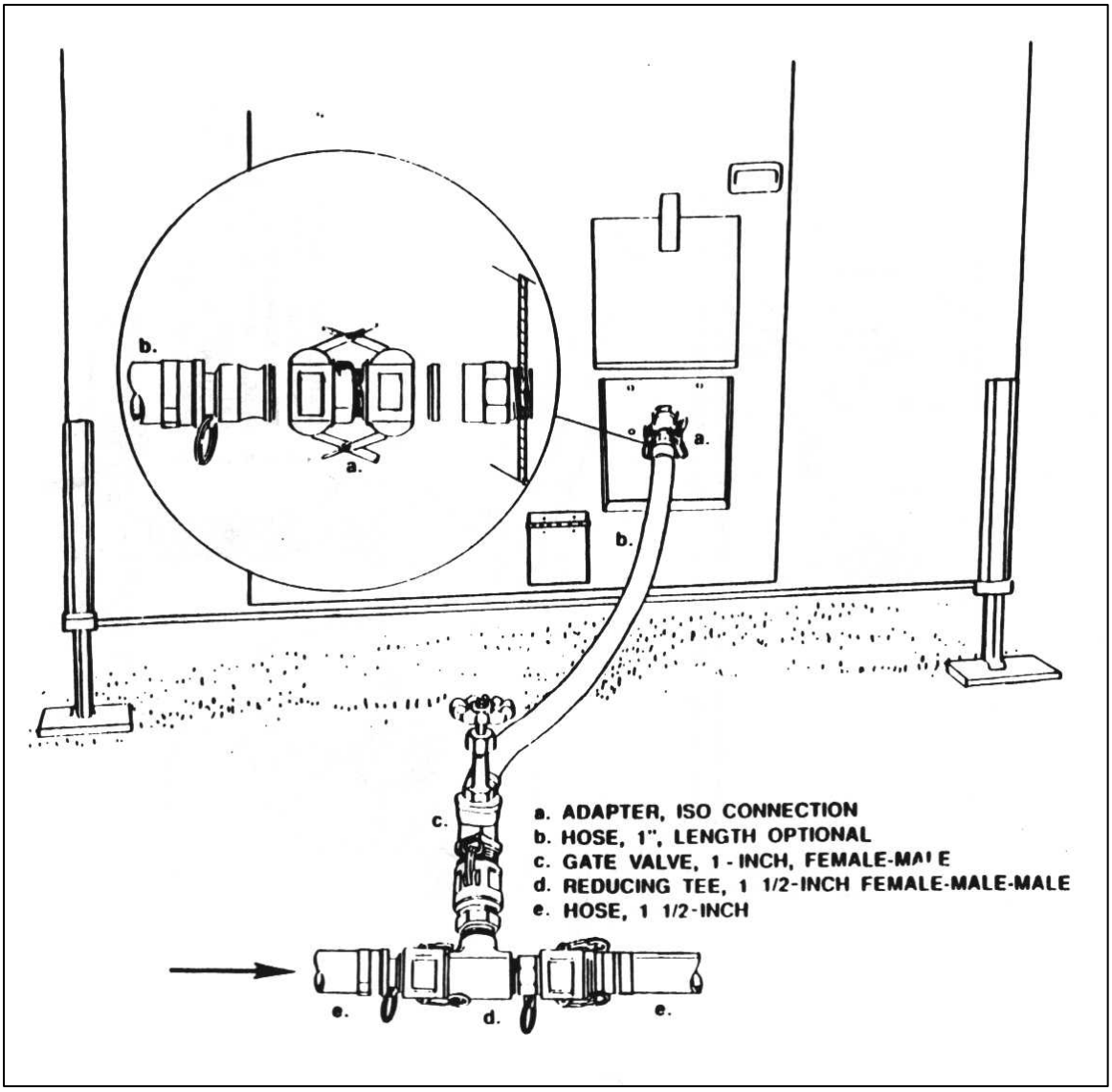

Figure 2-47
Connection to a Single Receptacle ISO (with hose)

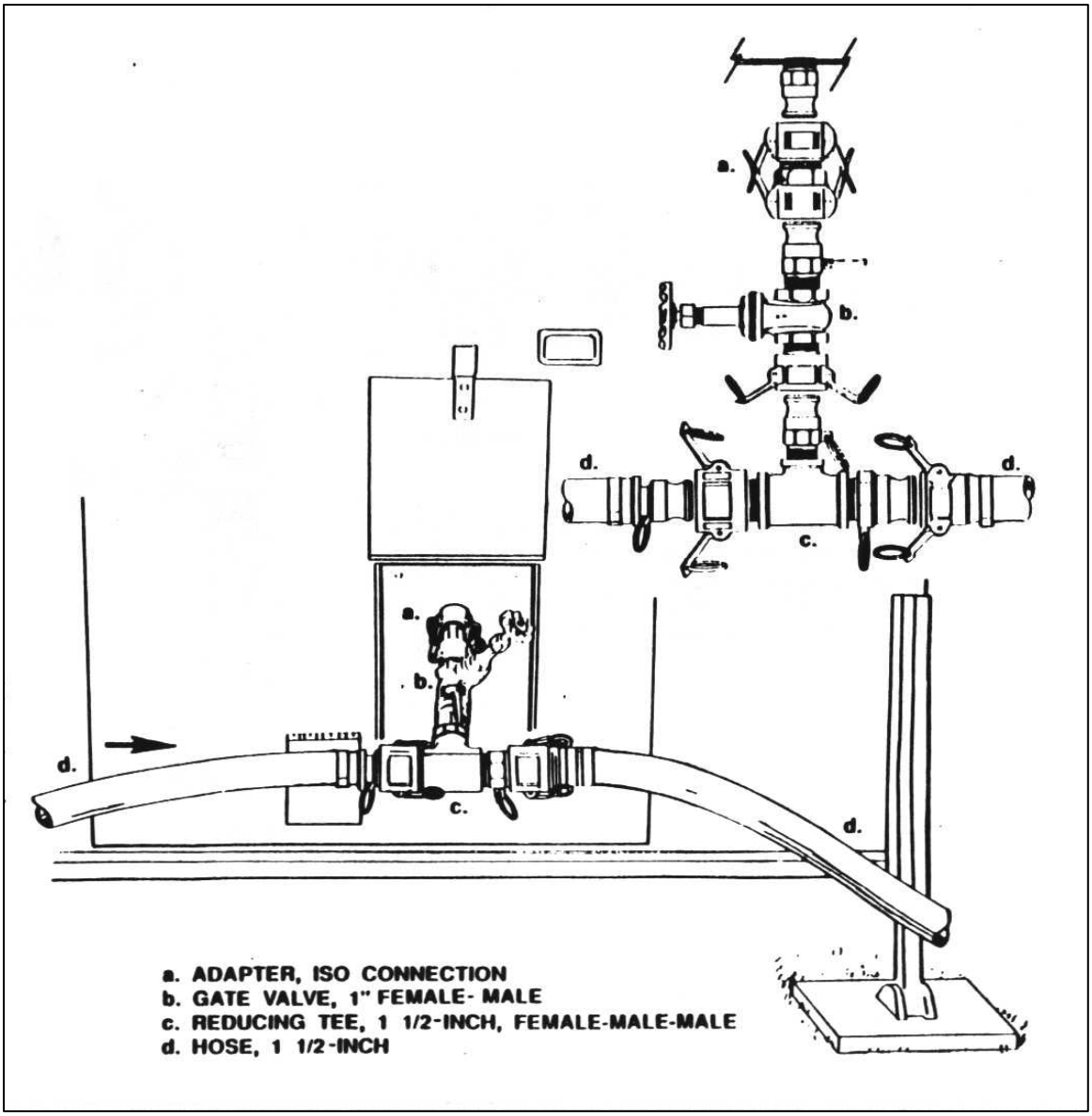

Figure 2-48
Connection to a Single Receptacle ISO (without hose)

2.4.7 Lay out the fittings and hose for the secondary loop(s). The beginning of each secondary loop is configured like that shown in Figure 2-41. The 1-inch gate valve here (item c) and at the end of the loop (item b, figure 2-42) allow you to shut off the water supply to the secondary loop without disrupting the water supply to the rest of the system. Always leave this valve open unless you are working on the secondary loop. To force water into the secondary loop, gradually close the 1½-inch valve (item e) until the flow meter (item b) shows the flow between 5 and 10.

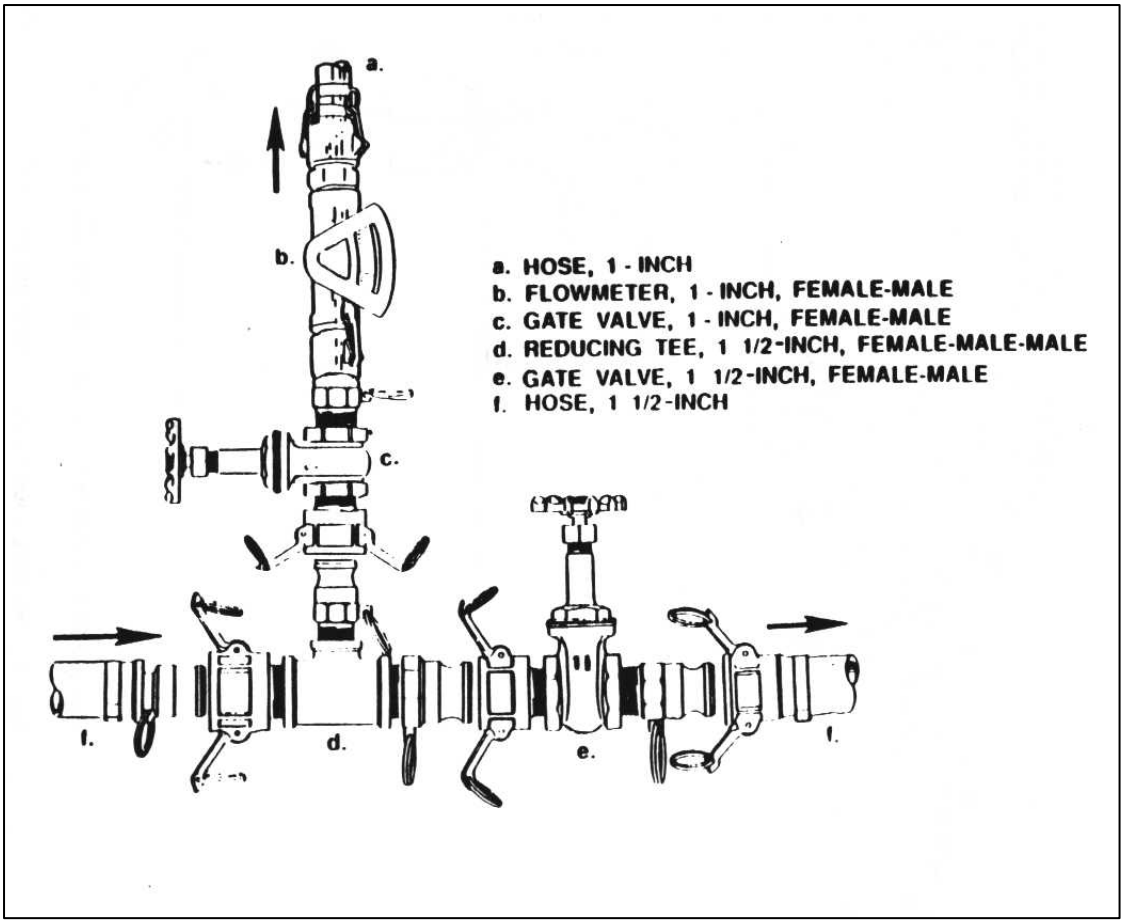

Figure 2-49
Fittings at the Start of a 1-Inch loop

2.4.8 The return side of each secondary loop is configured like that shown in Figure 2-42. The gate valve (item b) is used with the 1-inch valve discussed in paragraph h, above. The female-female adapter (item c) is used to connect the male fitting on the secondary loop to the one on the reducing tee (item d) in the primary loop.

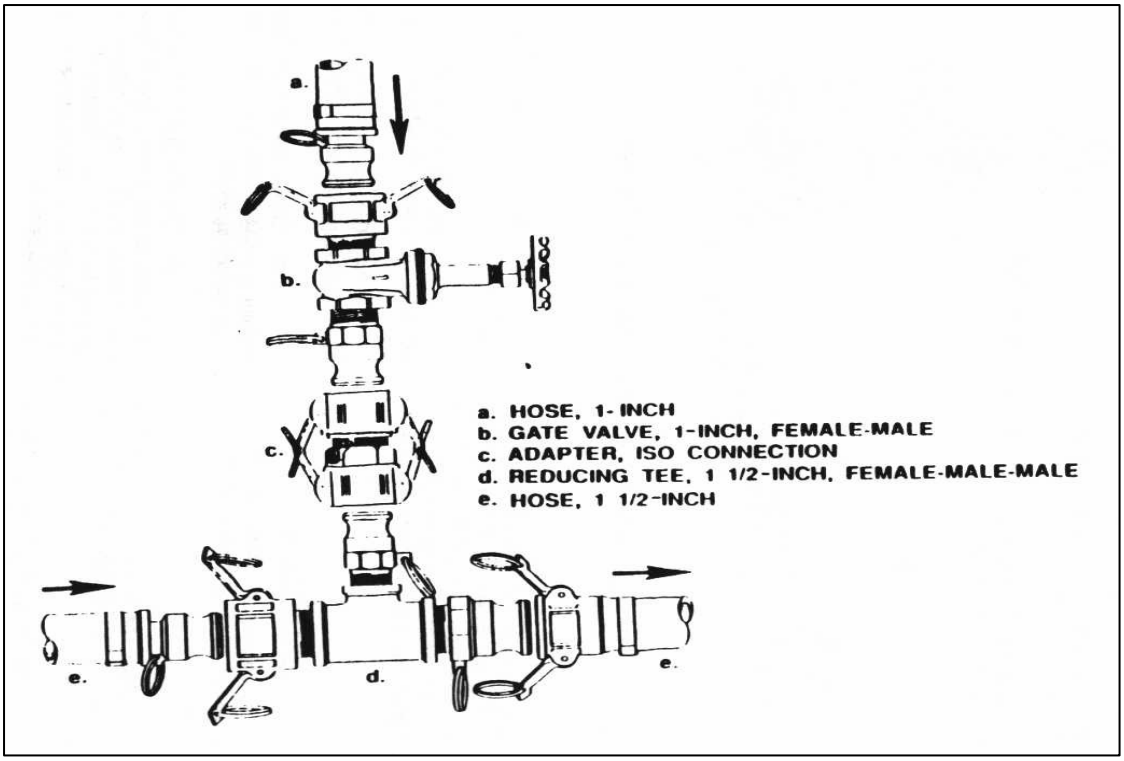

Figure 2-50
Fittings on Return Side of a 1-Inch loop

2.4.9 Lay out the necessary fittings and hose to connect the field sinks. Figure 2-43 is a typical configuration. The hose (item d) is optional. You can omit it, or use any length hose you need. There are two possible connections to the field sink:

2.4.9.1 Option 1 shows the connection from a 1-inch hose line.

2.4.9.2 Option 2 shows the connection from a 1½ -inch loop.

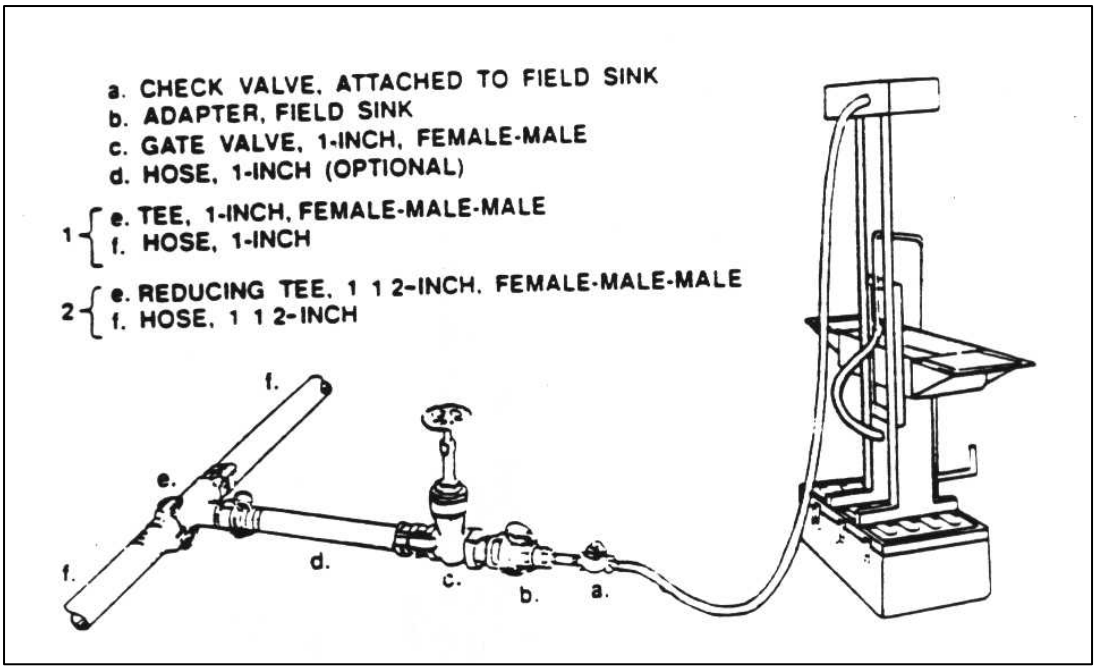

Figure 2-51
Field Sink Connections

2-4-10 Lay out hose lines to the nozzle locations. Place one nozzle next to each CMS tent. These hose lines need enough slack so that the nozzle can reach each autoclave. Place the 1-inch gate valve far enough away from the nozzle so that when the nozzle and hose are moved, the gate valve is not dragged.

2.4.11 Use the hose protection channels for hose crossing TEMPER corridors. If conditions and time permit, you may bury the hose and the protective channel, but it is not necessary. Run the hose under the edge of the tent flap and both layers of floor. You may have to untie the floor tie-downs. Place the protection channel along the width of the corridor. **DO NOT PLACE A PROTECTION CHANNEL OVER A HOSE CONNECTION.**

2.4.12 Lay out the locations for the Pump Assembly, Centrifugal, Hypochlorination Unit, Water Purification and Heaters, Water, Electric.

2.4.13 Connect all of the hose and valve connections.

2.4.14 Select open sockets on the electrical distribution panels. Make sure the circuit is off. Plug the pump's and water heater's electrical plugs into the electrical sockets.

2.4.15 Fill the water tank.

2.4.16 Have the Preventive Medicine Specialist (91S) fill the hypochlorination unit (NSN 4610-01-435-4884) with the requisite quantity of water and Disinfectant, Sodium Hypochlorite (NSN 6810-00-242-4770).

2.4.17 Have the Preventive Medicine Specialist (91S) test the quality of the water in the water tank, to assure potability, and adjust the hypochlorination unit.

OPERATION

2-5 Operation. The purpose of this paragraph is to ensure that the equipment is operated safely and that the system provides a continuous supply of potable water.

2.5.1 Monitor the water supply. Turn off the pump when the depth of water in the water tank is less than 8 inches. The bearings in the water pump will burn out if the pump impeller is not covered with water.

2.5.2 The field sanitation team should monitor the chlorine residual in the water supply. Measure chlorine residual at the water tank(s), and 20 percent (20%) of the sinks and nozzles in the distribution system daily. A chlorine residual is essential for preventing biological contamination. However, too high chlorine residual will make the water taste bad.

2.5.3 Remove and clean the filter in the filter assembly daily. This requires shutting down the pumps, hypochlorination unit and heaters. In order to minimize downtime, have a clean filter ready for immediate installation. Follow the procedure below to change the filter.

2.5.3.1 Turn off power to the heaters.

2.5.3.2 Turn off power to the hypochlorination unit.

2.5.3.3 Turn off the power to the pumps.

2.5.3.4 Close the gate valve next to the filter assembly.

2.5.3.5 Change filters in the filter assembly.

2.5.3.6 Open the gate valve.

2.5.3.7 Prime the pump (if required).

2.5.3.8 Turn on the power to the pump.

2.5.3.9 Turn on power to the hypochlorination unit.

2.5.3.10 Turn on power the power to the heaters.

2.5.3.11 Clean the old filter and place it in the storage container.

2.5.4 Periodically check for leaks around fittings, valves, gauges and hoses.

DISASSEMBLY

2-6 Disassembly

2.6.1 The procedures discussed in this paragraph will enable you to disassemble the system in a manner that is efficient and minimizes the chance of contamination. The procedure is intended to be independent of any other actions associated with the disassembly of the hospital. However, hose lines located inside a TEMPER must be removed before the tent can be disassembled.

2.6.2 Disconnecting the cam-lock fittings is not the first thing done in disassembly. However, it is the most frequent task and warrants being discussed first. This procedure is not the reverse of the assembly process previously discussed. The intent is the same though; disconnect with minimal risk of contaminating the system.

2.6.2.1 Unlock all four locking levers, without separating the fittings.

2.6.2.2 Separate the fittings. Rest the female fitting on a protective surface (**NOT ON THE GROUND**) with its opening up. The toe of your boot will work.

2.6.2.3 Lay the male fitting on the female fitting (or hose) in a way that prevents the male fitting from making contact with anything else.

2.6.2.4 Separate the dust cap and dust plug. **DO NOT PLACE THEM ON THE GROUND**.

2.6.2.5 Holding the dust plug, place the dust cap on the male fitting of the cam-lock.

2.6.2.6 Place the dust plug in the female fitting of the cam-lock.

2.6.2.7 Close all four locking levers.

2.6.3 Turn off power to the heaters.

2.6.4 Turn off power to the hypochlorination unit.

2.6.5 Turn off the pump and close the valves on the water tank(s).

2.6.6 Determine the topographical low point in the water distribution system. At this point, disconnect a hose section and permit the water in the hose to drain by gravity. If there is not one clear topographical low point; disconnect the hose at several points to encourage gravity draining.

2.6.7 While the hoses are draining, drain the remaining water from the storage tank(s). The location of the tank(s) may not be well suited for emptying their contents in place. You may wish to connect one or more lengths of discharge hose and drain the tanks away from the hospital. Use the pump to speed up the process. Set the pump up with suction hose, just as when laying the system out. Use as much hose as necessary to drain the tank(s) wherever you wish. **NOTE: Select a drainage location where the slope of the ground will not carry the water into the hospital area. NOTE: As the water storage tank empties, the water pump may become dry and subject to damage. Ensure that the water pump is in the water. Use caution to prevent the pump from running and burning up when the water level in the tank(s) falls below 6 inches.**

2.6.8 Once the tank is empty, open the drain cock on the pump and let the pump body drain. Tip the pump up to remove any water remaining in the bottom of the pump body. Leave the drain cock open to allow the pump body to air-dry.

2.6.9 While the system is draining, disassemble the hose, starting at the water tank(s).

2.6.9.1 Remove the gate valves and tee fittings before rolling hoses for storage. Reattach the dust caps and dust plugs to the fittings as you disconnect them. Place the fittings in the Skip Box, Materiel Handling.

CAUTION

To prevent contaminants from entering the system, reattach dust caps and dust plugs to fittings and hoses before storage.

2.6.9.2 When rolling hoses, leave the far end of the hose open to allow any remaining water to drain. If possible, keep that end off the ground. If this is not possible, rinse the end of the hose before attaching the dust cap or dust plug.

Figure 2-52
Suggested Method of Rolling 1½ inch Hose

2.6.9.3 Several lengths of short hose can be rolled as one piece.

2.6.9.4 1-inch hose cannot be rolled in the same manner as 1½-inch hose. It must be fed into the Skip Box, Materiel Handling and coiled in layers.

2.6.10 Remove the hoses from the inside of the Tempers. The instructions here presume that the hose in the TEMPER is part of a secondary loop.

2.6.10.1 Close all gate valves. This includes the valves to feeder lines, field sinks, and the valves at the beginning and end of the loop.

2.6.10.2 Disconnect all feeder lines and field sinks from the secondary loop. Leave gate valves attached to the secondary loop.

2.6.10.3 Disconnect the cam-lock connections immediately outside each end of the TEMPER. Lift one end of the hose and walk it through the TEMPER. Use caution as the fittings could rip the flooring.

CAUTION

Handle the hose inside the TEMPER with care. The fittings may damage the canvas or flooring.

2.6.11 Prior to storing the flowmeters and pressure gauges open the caps and plugs on each item and drain the water. Shake any additional water from each item before replacing the caps and

plugs. Store them in the Case, Electrical-Electronic Test (NSN: 6625-01-449-2857, PN: 13229E7189).

2.6.12 Advise users of the Hamilton sink to open the drain cock, pressure release valve, and heater drain valve. All of these components are inside the sink base and covered in more detail and discussed in the Hamilton sink operator's manual. These steps allow water to drain from the pump and the heater. This prevents the formation of rust and growth of bacteria.

PREVENTIVE MAINTENANCE

2.7 Preventive Maintenance The following preventative checks and services should be done periodically during operation. They should also be done prior to storing the equipment following completion of a mission or field training exercise.

2.7.1 *Water Storage Tanks*. Operator, Maintenance, and PMCS are addressed in the applicable Technical Manuals.

2.7.1.1 TM 5-5430-216-12&P. Operator and Organization Maintenance Instruction, Repair Parts and Special Tools List for Tank Fabric, Collapsible, 20,000 Gallon Water.

2.7.1.2 TM 5-5430-226-12. Technical Manual, Operator's and Unit Maintenance Manual for 20,000 Gallon, Collapsible Fabric Tank.

2.7.1.3 TM 10-5430-226-20P. Technical Manual, Unit Maintenance, Repair Parts and Special Tools List for 20,000 Gallon, Collapsible Fabric Tank.

2.7.1.4 TM 10-5430-237-12&P. Operator and Unit Maintenance Manual (including repair parts and special tools list) Collapsible Fabric Tanks, Water Storage, 3000 Gallons.

2.7.2 *Pump*. Operator, Maintenance and PMCS are addressed in TM 5-4320-274-14&P and elsewhere in this manual.

2.7.3 *Discharge Hose.* Check hoses for abrasions, cuts, and gouges. Check for –

- Presence of bulges or seepage during operations.
- Presence and condition of locking levers.
- Presence and condition of hose clamps.
- Presence of cap and plug attached by chain and key rings.
- Abrasions on cam-lock fittings.
- Presence and condition of gaskets inside the female fittings and caps.

2.7.4 *Suction Hose*. Perform the same checks for the discharge hose. The shape of the hose is maintained by steel coils and should be generally round. If the hose is deformed (normally caused by vehicle traffic), use a rubber or lead hammer to restore the cylinder shape of the hose.

2.7.5 *Fittings and Valves.* Check –

- For cracks in the body of the fitting or valve.
- For leakage at the threads
- For broken or bent handles on gate valves.
- To ensure that the nut at the top of the rising stem gate valve is secure.

2.7.6 *Gauges and Flowmeters.* In addition to functional checks during normal operations, check for -

- Cracked or broken glass.
- The presence of caps and plugs attached by chain and key rings.
- Presence and condition of gaskets inside the female fittings and caps.

2.7.7 *Container, Cargo (MILVAN).* Operator, Maintenance, and PMCS are addressed in TB 55-8115-200-23, Technical Bulletin, Standards of Maintenance for MILVAN Containers; and TM 55-8115-200-23&P, Technical Manual, Organizational and Direct Support Maintenance Manual (including repair parts and special tools list), Container, General Cargo; MILVAN.

REPAIR PROCEDURES

2-8. Repair Procedures. Part of the Water Distribution and Wastewater Management System (WDWWMS) is the WDWWMS Maintenance Set that includes an assortment of repair parts and critical tools to maintain the system. This set is fielded with the remainder of the system. It is the user's responsibility to replenish the components as needed.

2.8.1 *Hose*. The repair procedures discussed here applies to both suction and discharge hoses.

2.8.1.1 Broken, torn, or punctured hose. The principal behind repair services for a damaged hose is to make two good hose sections from one damaged one. Dispose of pieces of hose shorter than 2-feet.

2.8.1.1.1 Use a hacksaw to cut the hose and remove the damaged portion.

2.8.1.1.2 Place two hose clamps (from the maintenance set) over the newly cut end.

2.8.1.1.3 Insert a hose coupling in the newly cut end, as far as it will go. The coupling must be the opposite gender of the cam-lock fitting on the other end of the hose.

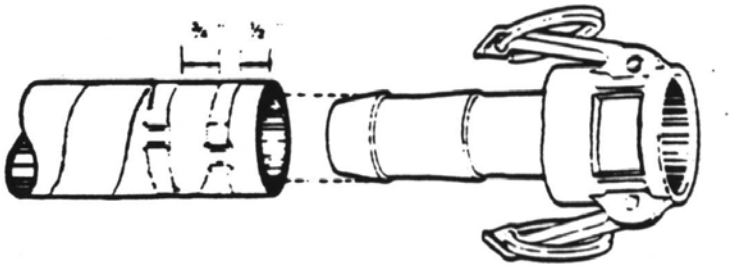

Figure 2-53
Hose Repair

2.8.1.1.4 Position the hose clamps near the end of the fitting.

2.8.1.1.5 Tighten the hose clamps and trim off the excess.

2.8.1.1.6 Attach key rings, chain, and caps (or plugs).

2.8.1.1.7 Repeat steps 2.8.1.1.2 through 2.8.1.1.6 for the other piece of hose.

2.8.2 *Fittings and Valves*. Replace missing or damaged caps, plugs, chains, and rings as needed. The complete fittings and valve assemblies are made up of individual parts that may be requisitioned separately. Should a fitting or valve become unserviceable, retain the serviceable parts for use in reassembling the fitting or valve. This can also be applied to the nozzle, flowmeters and pressure gauge.

CHAPTER 3
WASTEWATER MANAGEMENT SET (WWMS)

INTRODUCTION

3.1 General

3.1.1 This chapter describes the components as well as the assembly, operation, and disassembly of the Wastewater Management Sets (WWMS). The combination of hoses, fittings and valves provides maximum flexibility in setting up the sets. This flexibility will enable you to set up the sets in almost any configuration that will accommodate the hospital's mission.

3.1.2 The Wastewater Management Sets come in three basic authorized configurations depending on the type of Combat Support Hospital (CSH) to which it is authorized.

- Wastewater Management Set, Hospital, DEPMEDS (MF2K, 296-Bed)
- Wastewater Management Set, MRI, 84-Bed (CORPS)
- Wastewater Management Set, MRI, 164-Bed (Echelons Above CORPS)

3.1.3 The basic components of these three configurations are identical; the only difference is the number or components authorized.

3.1.3.1 The Wastewater Management Set, Hospital, DEPMEDS (MF2K, 296-Bed) (NSN 6545-01-434-9624) (LIN W33068) is designed to support the MF2K 296-Bed CSH.

3.1.3.2 The Wastewater Management Set, MRI, 84-Bed (CORPS) (NSN 6545-01-491-4728) (LIN W49853) is designed to support the 84-Bed MRI CSH at the CORPS level of care.

3.1.3.3.The Wastewater Management Set, MRI, 164-Bed (Echelons Above CORPS) (NSN 6545-01-502-4992) (LIN Z00134) is designed to support the 164-Bed MRI CSH at the echelons-above-CORPS level of care.

3.1.4 There is also a 44-Bed configuration designed to support contingency operations. (NSN 6545-01-500-1690) (UA 3223) This configuration is not authorized by the ORD and is only built and fielded to support the theater of operations.

3.1.5 The reason for having a WWMS is to collect and later dispose of hospital wastewater in a safe manner. In addition, it aids in the control of infectious and communicable diseases.

3.1.6 In the practice of safe hygiene, it is essential to maintain complete separation of the Water Distribution Set and the WWMS.

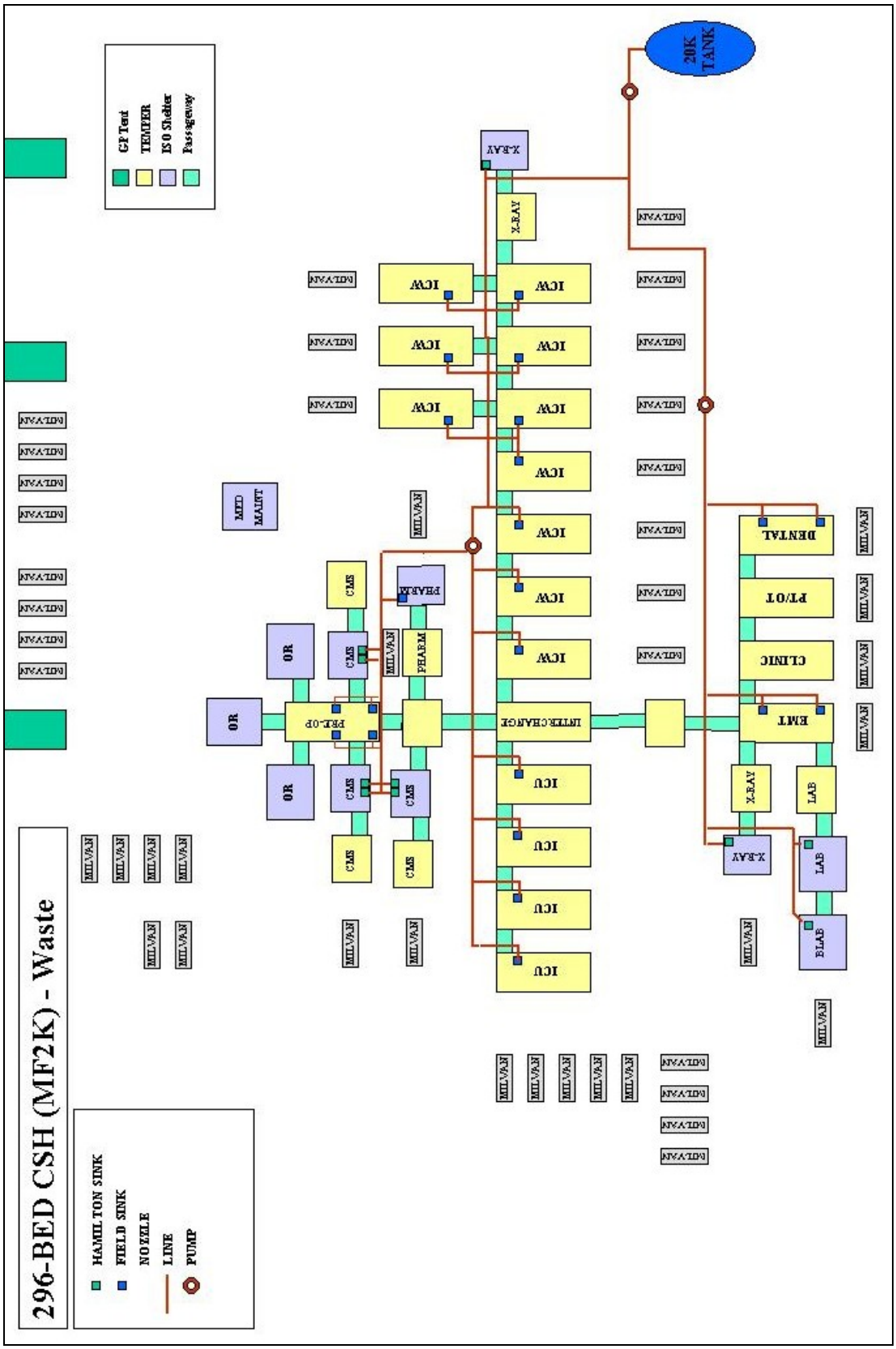

Figure 3-1
296-Bed CSH (MF2K) Recommended WWMS Layout

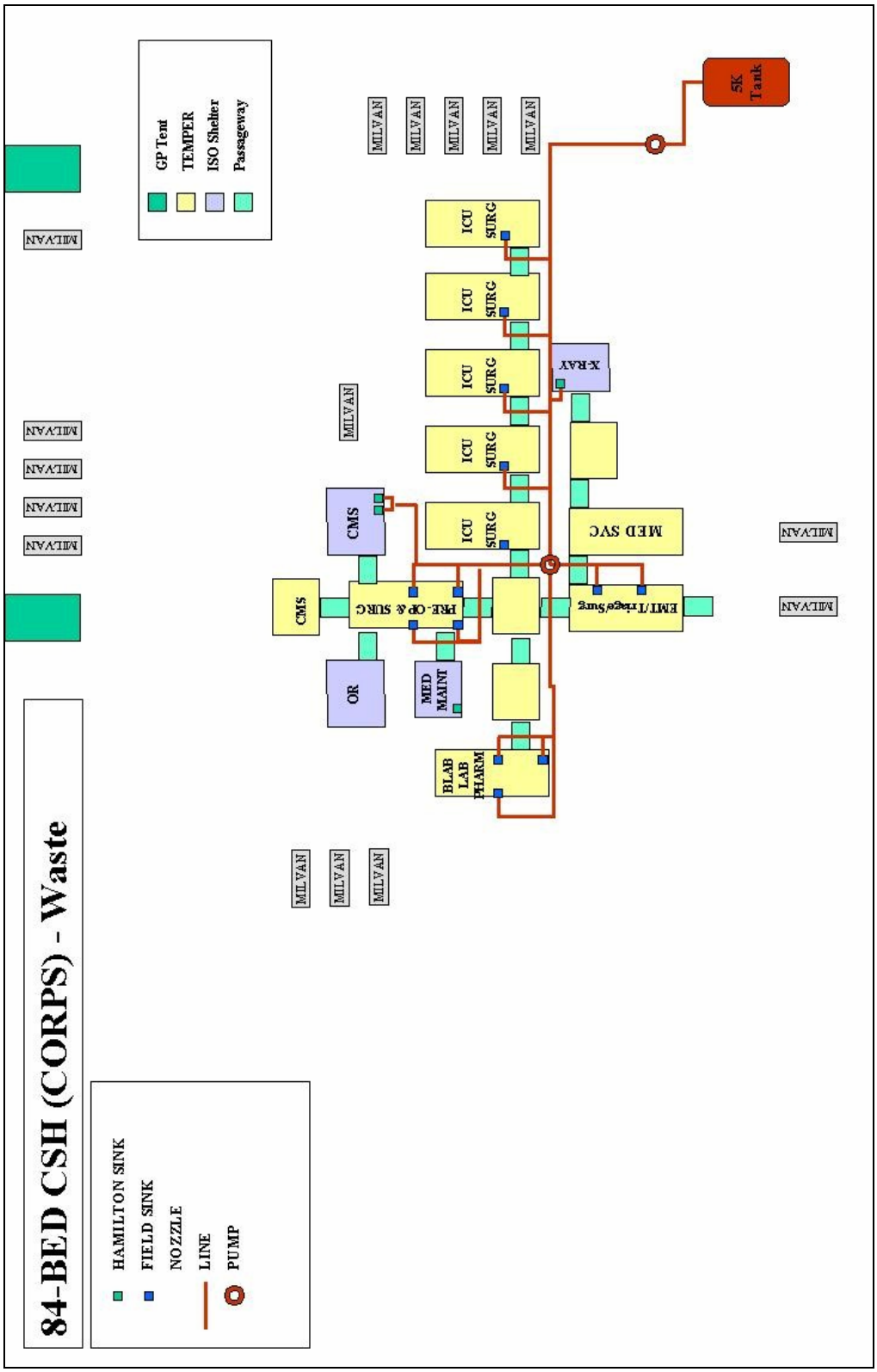

Figure 3-2
84-Bed CSH (MRI) Recommended WWMS Layout

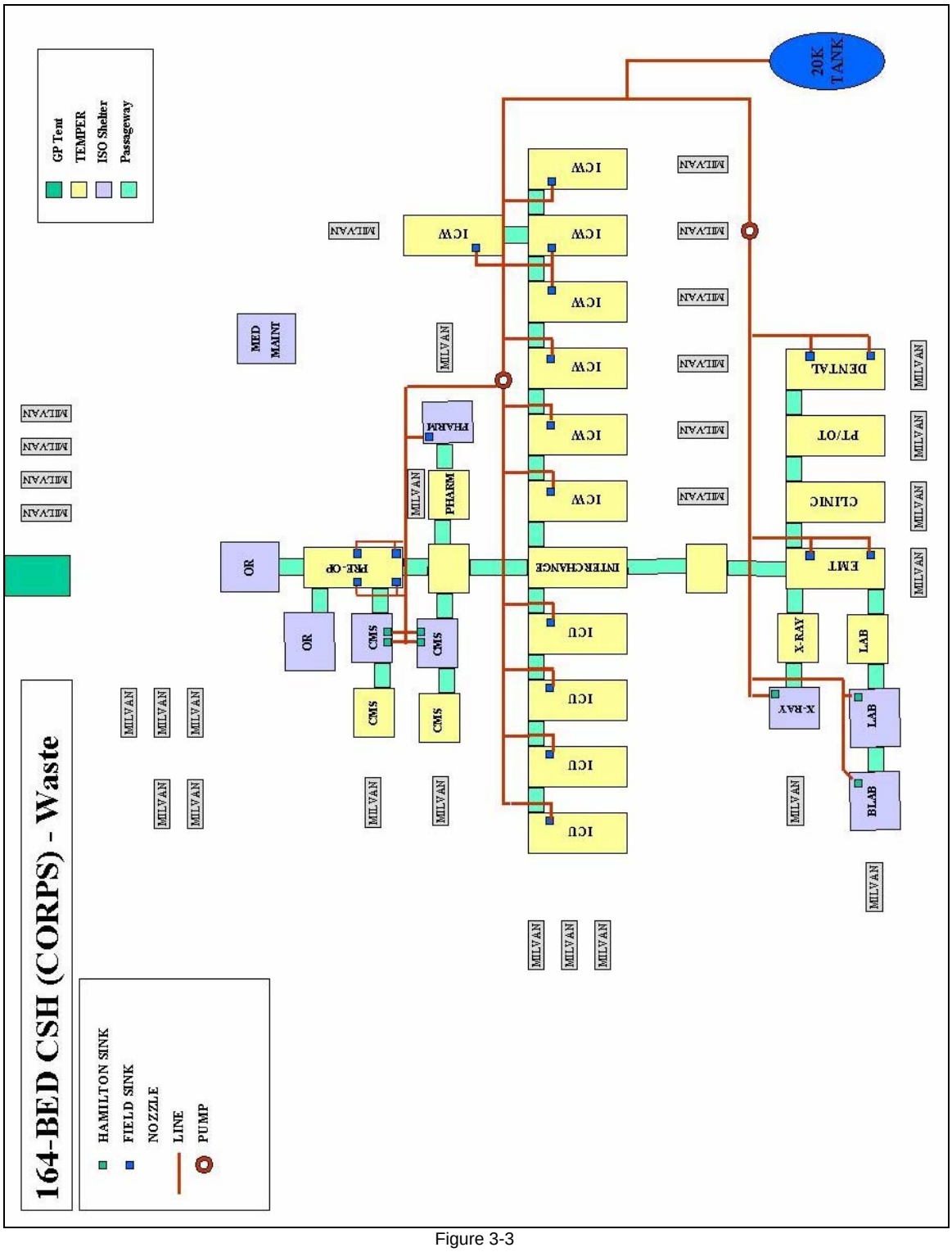

Figure 3-3
164-Bed CSH (MRI) Recommended WWMS Layout

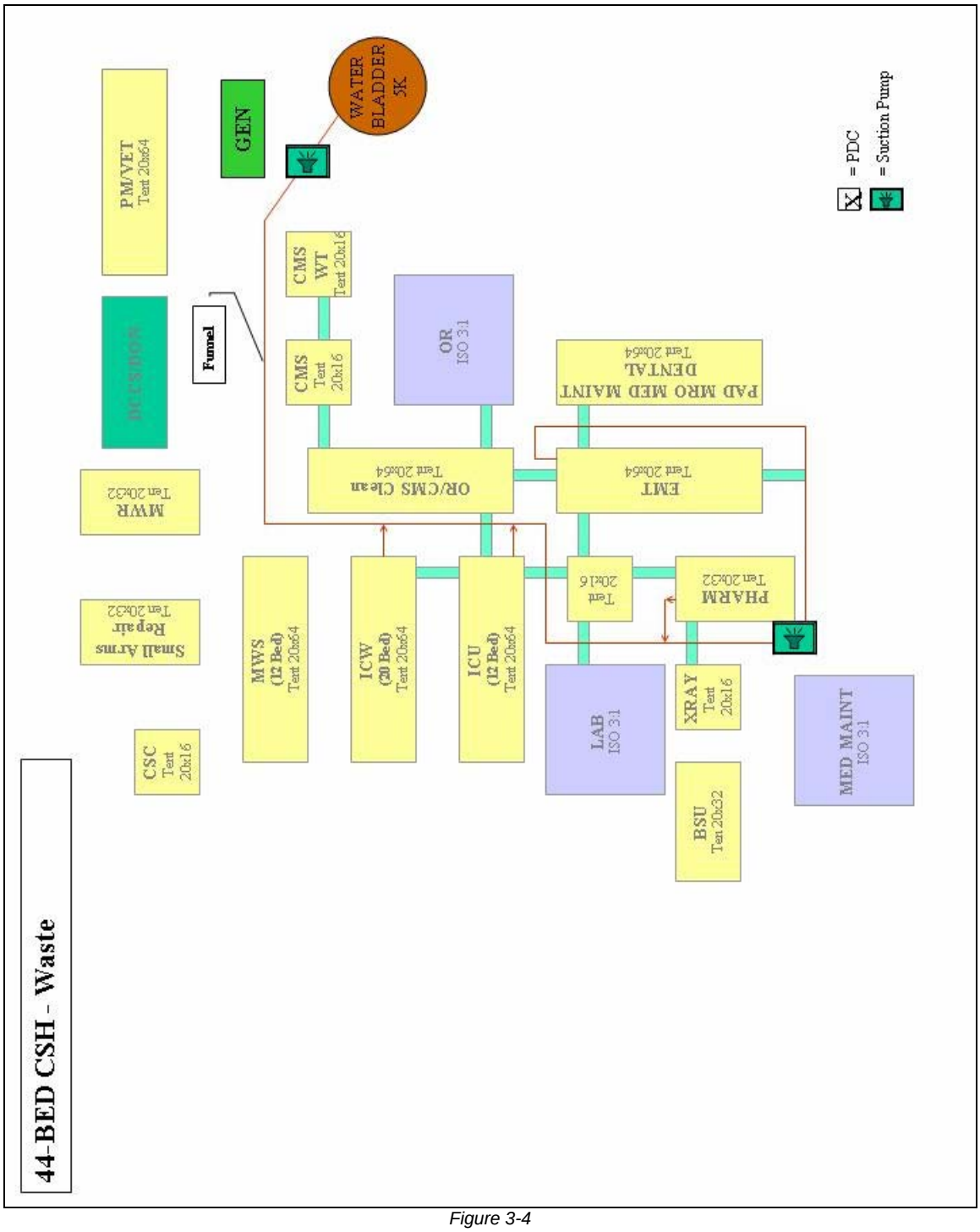

Figure 3-4
44-Bed (Operational Variant) Recommended WWMS Layout

3.2 Components

3.2.1 *Coupling Halves*. The Universal Quick Disconnect (or coupling half) is made of galvanized steel and incorporates a rubber gasket to provide a watertight seal when the halves are connected. Two coupling halves will allow the connection of:

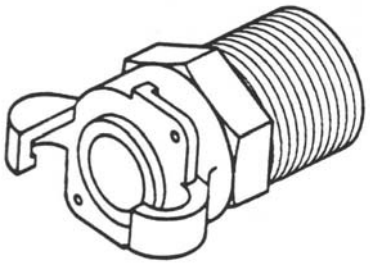

Figure 3-5
Coupling Half
Universal Quick Disconnect

3.2.1.1 two wastewater hoses,

3.2.1.2 a wastewater hose and the Pump Assembly, Diaphragm (NSN: 4320-01-440-7388),

3.2.1.3 a wastewater hose and a Valve, Ball (NSN: 4820-01-440-5916)

3.2.1.4 a wastewater hose and a Wye, Quick Disconnect (NSN: 4730-00-496-5952)

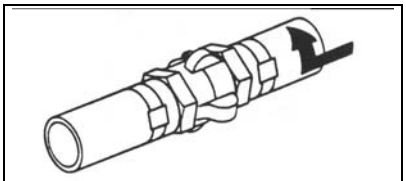

Figure 3-6
Coupling Connection

3.2.1.5 With two exceptions, all connections in the WWMS use universal quick disconnect. The two exceptions are:

- Sink Drain Adapter
- Hose Assembly, Rubber used with the Field Sinks and the Ultrasonic Cleaners.

3.2.2 *Water Storage Tanks*. Units are authorized the following types and quantities of water storage tanks.

Types

- LIN T12938, Tank Fabric Collapsible, 20,000 Gallon Capacity
- Tank Fabric, Collapsible, 5,000 Gallon
- LIN T19033, Tank, Fabric Collapsible, 3,000 Gallon Capacity

Quantities

LIN	T12938		T19033
NSN	5430-01-406-0507	5430-01-506-1999	5430-01-170-6984
	20K Gal	5K Gal	3K Gal
MF2K	1	0	1
MRI 84	0	1	0
MRI 164	1	0	0
44-Bed	0	1	0

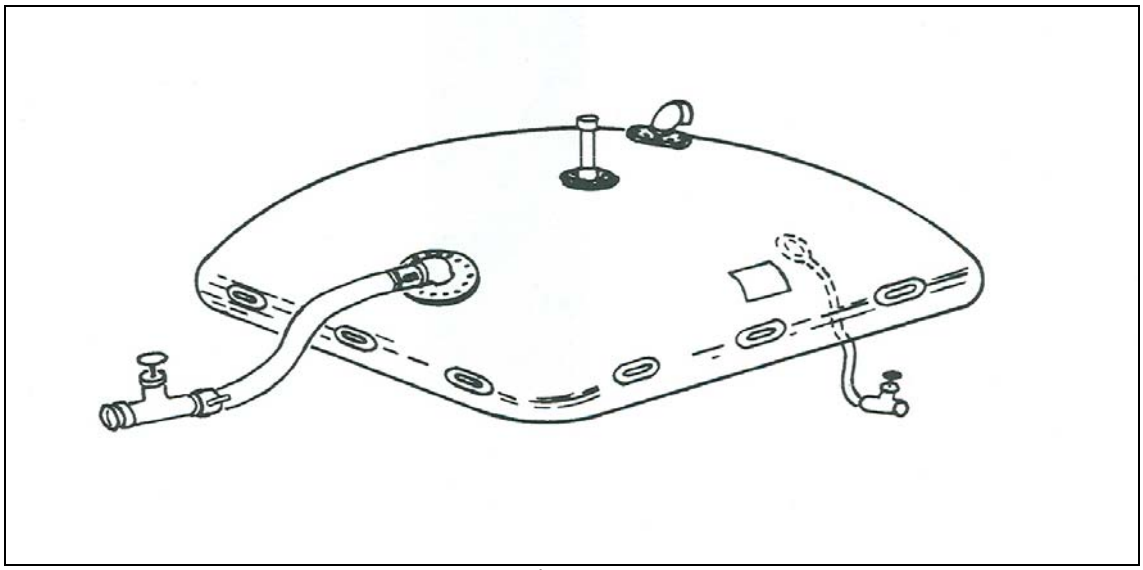

Figure 3-7
Tank, Fabric, Collapsible, 20,000 Gallon

Figure 3-8
Tank, Fabric, Collapsible, 20,000 Gallon
(laid out on ground)

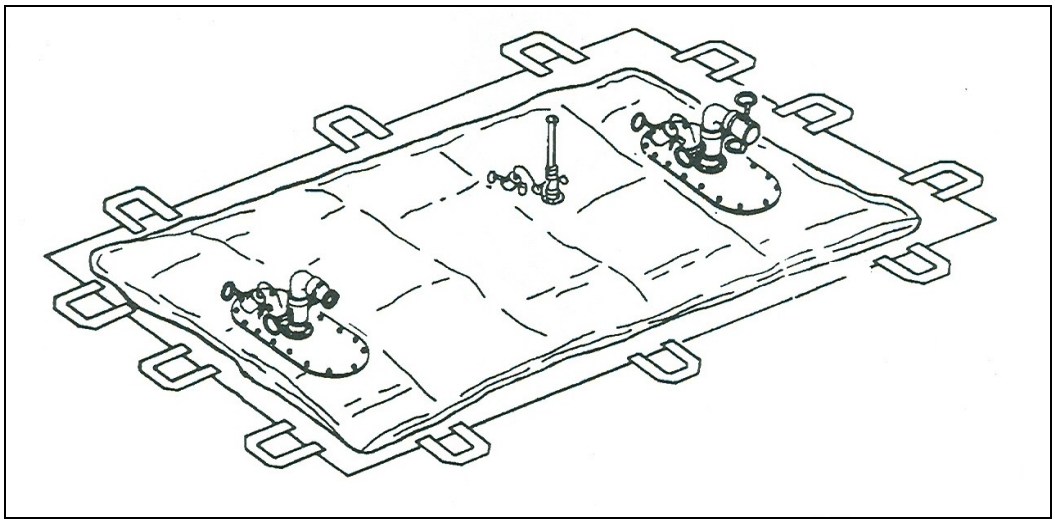

Figure 3-9
Tank, Fabric, Collapsible, 5,000 Gallon

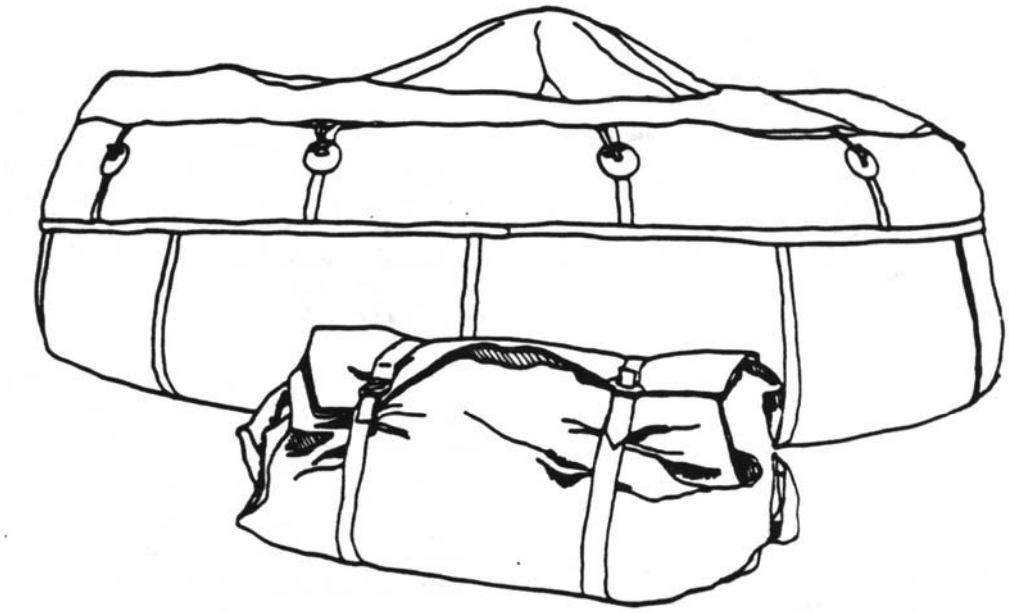

Figure 3-10
Tank Assembly, Fabric, Collapsible, 3,000 Gallon
(Onion Type)

3.2.3 *Hose Assembly*. All hoses in the WWMS are black in color. These hoses are not used for any purpose other than wastewater evacuation. Each hose assembly has a universal quick disconnect at each end. **Do not use black hose to replace or repair any potable water (sand color) hose.** Hoses in the set are:

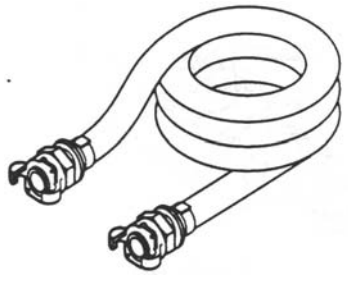

Figure 3-11
Hose Assembly, Nonmetallic

3.2.3.1 Hose Assembly, Rubber (NSN: 4730-01-434-9638) (PN: 13230E5746-4) 1½-inch x 50-feet.

3.2.3.2 Hose Assembly, Rubber (NSN: 4730-01-434-9594) (PN: 13229E7223-2) 1-inch x 10-feet.

3.2.3.3 Hose Assembly, Rubber (NSN: 4730-01-434-9605) (PN: 13229E7223-3) 1-inch x 20-feet.

3.2.3.4 Hose Assembly, Rubber (NSN: 6545-01-434-9646) (PN: 13229E7223-1) 1-inch x 5-feet.

3.2.3.5 Hose Assembly, Rubber (NSN: 6545-01-434-9649) (PN: 13229E7223-4) 1-inch x 50-feet.

3.2.4 *Adapter, Sink*. (NSN: 6545-01-434-9630) (PN: 13229E7224) The sink adapter consists of a pipe to hose adapter, a reducing pipe coupling, and a universal quick disconnect coupling half.

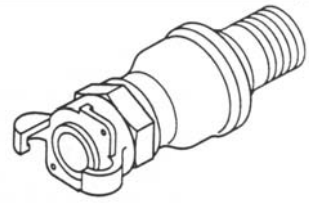

Figure 3-12
Adapter, Sink (for Hamilton Sink)

3.2.5 *Hose Assembly, Rubber (Field Sink Drain Hose Assembly)*. (NSN: 6545-01-434-9627, PN: 13229E7226) This assembly consists of a section of black hose with a hose coupling assembly on one end and a universal quick disconnect coupling half on the other end. This assembly replaces the existing drain hose on field sinks.

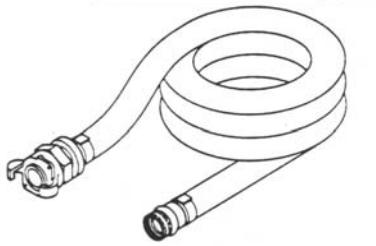

Figure 3-13
Hose Assembly, Rubber (Field Sink Drain Hose Assembly)

3.2.6 *Stand Assembly, Distribution Nozzle*. (NSN: 4930-01-120-7426, PN: 13225E9140) The Stand Assembly is a collapsible steel tripod. It has chains attached to the legs to prevent them from opening too far. Each leg has a hook at the top to hang the Funnel Assembly (NSN: 6545-01-434-9587).

Figure 3-14
Stand Assembly, Distribution Nozzle

3.2.7 *Funnel Assembly*. (NSN: 6545-01-434-9587, PN: 13229E7229) The Funnel Assembly consists of a large black funnel with a screen fitted inside, a universal quick disconnect coupling half secured to a discharge tube, and three hooks for hanging the funnel from the Stand Assembly, Distribution Nozzle.

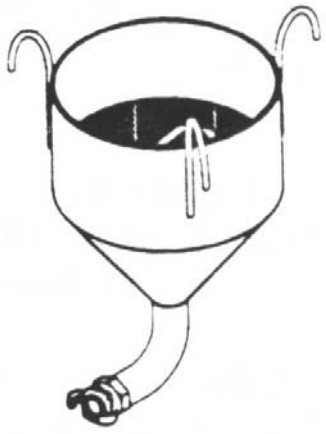

Figure 3-15
Funnel Assembly

WARNING

The Water Distribution Nozzle and the Waste Funnel Assembly should not be suspended from the same Stand Assembly. This could result in contamination of the water system. Use one Stand Assembly for the nozzle and one Stand Assembly for the Funnel Assembly.

3.2.8 *Valve, Ball*. (NSN: 4820-01-440-5916, PN: 13225E7225) The ball valve provides a means to close off the WWMS. It is used near the funnel and stand assemblies.

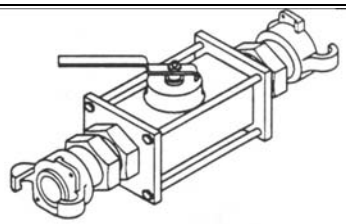

Figure 3-16
Valve, Ball

3.2.9 *Storage Devices*.

3.2.9.1 The Wastewater Management Set, MF2K comes with two possible configurations of storage devices.

3.2.9.1.1 The older configurations of the WDS come with:

3.2.9.1.1.1 Storage and Retrieval Materiel System (NSN: 3990-01-449-1997, PN: 13229E7185). This reel-like component is used to store set fittings. The rack is divided into four compartments. This assembly is moved in the same manner as the Reel Assembly. When full, this can weigh as much as 250 pounds.

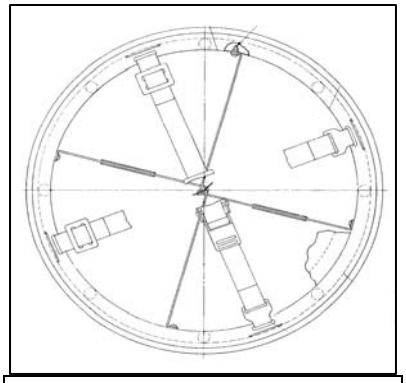

Figure 3-17
Storage and Retrieval Materiel System

CAUTION

When full, this storage and retrieval system can weigh up to 250 pounds and require at least five soldiers to lift it.

NOTE

One method of safely moving this item is to ensure that the cover is securely fastened, setting the item on its side, and rolling it.

3.2.9.1.1.2 Reel Assembly, Hose (NSN: 4940-01-449-3840, PN: 13229E7186-1). This reel assembly is designed for the storage of hoses in the WWMS. **Store ONLY wastewater water hoses (black colored) in these reels.**

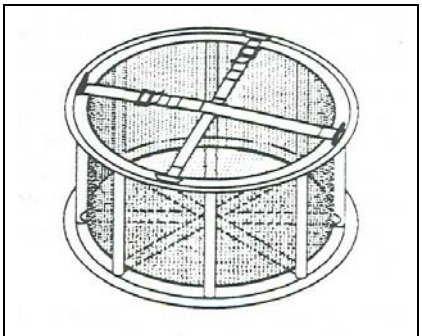

Figure 3-18
Reel Assembly, Hose

CAUTION

When full, this reel and contents can weigh up to 250 pounds and require at least five soldiers to lift it.

NOTE

One method of safely moving this item is to ensure that the cover is securely fastened, setting the item on its side, and rolling it.

3.2.9.1.2 The newer configurations of the WDS come with Skip Box, Material Handling. The cage-like device is designed for the storage of hoses and fittings.

3.2.9.2 The Wastewater Management Set, MRI, 84-Bed and the Wastewater Management Set, MRI, 164-Bed comes with the Skip Box, Material Handling. The cage-like device is designed for the storage of hoses and fittings.

3.2.10 *Pump Unit, Reciprocating*. (NSN: 4320-01-440-7388) (PN: 13229E7222) Current configurations of this system come with an electric motor driven pump that is a portable, frame mounted, unit designed to evacuate wastewater at the maximum rate of 2,600 gallons per hour at 60 strokes per minute. This pump is equipped with a ¾-HP (horsepower), capacitor start, ball bearing motor.

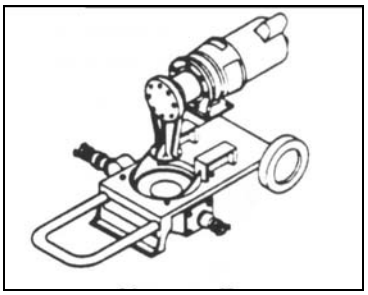

Figure 3-19
Pump Unit, Reciprocating

3.2.11 *Container, Cargo*. The WWMS is functionally packed within a Container, Cargo (NSN: 8115-01-241-7524) (LIN: C13825).

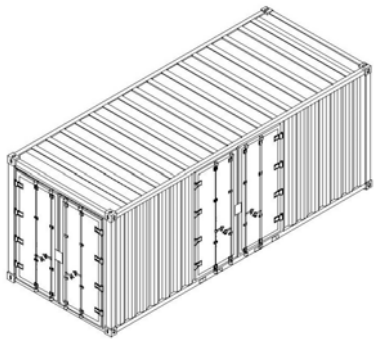

Figure 3-20
Container, Cargo
(MILVAN)

PRINCIPLES OF INSTALLATION

3.3 GENERAL. The information in this chapter provides guidance to help plan the physical layout for the hospital. Obtain a scale drawing or diagram of the deployed hospital and sketch the layout of the Water Distribution Set and the WWMS on this diagram. Depending on the size and configuration of the hospital, plan on at least one primary loop, and if weather conditions warrant, the use of one or more secondary loops.

3.3.1 *Location of Wastewater Collection Site.* The collection site is the most important factors in setting up the WWMS. The terrain as well as the plans of the Unit Commander will dictate placement and the type of collection site(s).

3.3.1.1 The collection site must be at least 300 feet (100 yards) from the hospital boundary.

3.3.1.2 It should must not be located on higher terrain that the freshwater tank(s). Position the collection site in an area lower than the rest of the hospital and away from the fresh water tank(s).

This will aid the pump in drawing the wastewater and, if a leak occurs, prevent the wastewater from contaminating the other areas of the hospital complex.

3.3.1.3 Sufficient space needs to be allocated to ensure waste water does not overflow into areas where its presence would be undesirable.

3.3.1.4 Allow space for wastewater evacuation vehicles access to the waste water tank(s).

WARNING

The Wastewater Collection Site MUST be at least 300 feet (100 yards) from the hospital boundary, and should never be on a higher terrain level than the freshwater tank(s).

3.3.2 *Location of Pumps*. Locate pumps on each loop, close to the collection site. Note that the power cable on the pump is 40 feet long. **DO NOT USE AN EXTENSION CORD**. Elevate electrical connections (plugs, etc.) on wooden blocks above areas where puddles may form. The pump provided [Pump Assembly, Diaphragm, NSN: 4320-01-440-7388, PN: 13229E7222] is driven by a single-phase 115 volt, 60 Hertz electric motor. The motor should be supplied by a dedicated branch circuit protected by a fuse or circuit breaker rated at no more than 15 amps.

3.3.3 *Location of Sinks and Water Distribution Connections*. The WWMS collects waste water from sinks and drain funnels. The location of Water Distribution Set components will determine the layout of the WWMS hoses and receptacles. They should be located to preclude cross-contamination of the potable water.

3.3.4 *Location of Hose Protection Channels*. Hoses should not cross vehicle routes. Hoses crossing pedestrian paths should be kept to a minimum. If a hose must cross a TEMPER, do so at a passageway, and use a hose protection channel. Where possible, allow waste and fresh water hoses to share a hose protection channel.

ASSEMBLY

3.4 Assembly.

3.4.1 This paragraph provides some general guidelines and some rules on how to assemble the WWMS. Be prepared to alter the initial plan of the WWMS to be compatible with the Water Distribution Set and to accommodate movement or addition of sinks, funnels, or collection sites, and to reduce excessively long hose runs.

3.4.2 Use the sketch of the WWMS layout and position the funnel assemblies. Make all sink and funnel assembly connections. Place the ball valve assembly on the funnel assembly directly or immediately after a 5 foot section of hose. Ensure that all sink drains are plugged and all ball valve assemblies are closed. Add hose assembly sections as necessary to exit structures.

3.4.3 The Adapter, Sink (NSN: 6545-01-434-9630, PN: 13229E7224) is forced into the flexible pipe extension of a Hamilton Sink. The universal quick disconnect coupling half is connected to the WWMS.

WARNING

To avoid possible contamination, wastewater hose assemblies should never be stored with fresh water hose assemblies. Waste hoses should not be allowed to drip or discharge wastewater onto components of the Water Distribution system.

3.4.4 Remove the existing field sink drain hose by unscrewing the ¾ inch hose coupling assembly under the sink. Replace it with the Hose Assembly, Rubber (NSN: 6545-01-434-9627, PN: 13229E7226). Following connection the universal quick disconnect coupling half is connected to the WWMS.

3.4.5 Starting at the sink drain and funnel hose assemblies, lay out the hose sections to connect to the trunk lines. Lay out the trunk lines and determine where the Wye, Quick Disconnect (NSN: 4730-00-496-5952, PN: WW-C-633-M) will be required. Connect all hose assemblies, using the Wye fittings, where necessary, to complete the system.

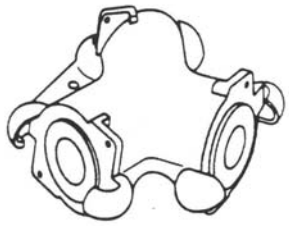

Figure 3-21
Wye, Quick Disconnect

CAUTION

Be sure to check the condition of the gaskets on the hose fittings as you assemble the hoses. Do not drag the hoses, you will damage the hose and the fittings.

CAUTION

To ensure proper seating of the fittings, remove all burrs from the fittings using a file (located in the WDWMS Maintenance Set).

WARNING

To avoid injury, limit the amount of hose carried by one person.

3.4.6 Connect a Hose Assembly, Rubber (NSN: 6545-01-434-9646) (PN: 13229E7223-1) 1-inch x 5-feet to the funnel and connect the Valve, Ball (NSN: 4820-01-440-5916, PN: 13225E7225) to the 5-foot hose.

3.4.7 Position the Pump Unit, Reciprocating (NSN: 4320-01-440-7388, PN: 13229E7222) as close to the collection site as possible. Long hose runs on the discharge side reduce the pump's capacity.

NOTE: Prior to EVERY setup and use, the operator/maintainer is required to install a reducing coupling and a universal quick disconnect coupling half to the intake side of the pump (it has male threads). The discharge side of the pump has female threads and requires the installation of a 4 inch pipe nipple, a reducing coupling and a universal quick disconnect coupling half.

CAUTION

During installation of the pipe adapters, do not screw the pipe nipple more than 5/8-inch into the discharge port of the Pump Unit Reciprocating.

CAUTION

On the Pump Unit, Reciprocating, be sure to remove the breather filler plug seal before operation. Using pliers to remove, pull the 1-inch long "spaghetti" shaped plastic from the hole drilled horizontally through the breather plug.

CAUTION

The Pump Unit, Reciprocating should be located at the lowest practical elevation and as close to the evacuation site as possible.

CAUTION

If possible, avoid allowing debris to enter the system. The Pump and Hose Assemblies are capable of passing some solids, however, inducing solids into the system should be avoided.

3.4.8 Connect the Pump Unit, Reciprocating to an approved power source. While the Water Distribution system is being flushed, turn on the pump. Observe the system to ensure that there are no leaks and that the pump is working on both intake (suction) and discharge sides. Check tightness of each connection by pouring about one gallon of water into the drain of each sink and funnel to ensure that there are no leaks and that the pump is working properly.

OPERATION

3.5 Operation

3.5.1 Monitor the hose assemblies for leaks in the fittings and in the hose.

3.5.2 Monitor the evacuation site for leaks and spills. This system is designed to provide collection of the wastewater for evacuation from the site. Coordinate with Preventive Medicine personnel within the Theater to periodically neutralize the collected waste water and evacuate the material from the hospital site for further treatment or disposal.

3.5.3 Inspection of the pump, **On a daily basis**

3.5.3.1 Check the valves. If the discharge valve does not seat properly, vacuum lift is lost. If the intake valve does not seal, pump efficiency will be lost.

3.5.3.2 Check the diaphragm for leaks and wear.

3.5.3.3 Grease the eccentric drive daily with 4 to 6 strokes of a grease gun. *Use Grease, General Purpose (NSN 9150-01-226-4315) and Lubricating Gun, Hand (NSN 4930-00-253-2478) that can be found in the Maintenance Set*.

CAUTION

Always keep the sink drains plugged when not actually draining water. Leaving them open will degrade the system and may burn out the Pump Unit.

NOTE

FAILURE TO PERFORM DAILY PMCS (TO INCLUDE GREASE) WILL RESULT IN DECREASED LIFE TO THE PUMP UNIT.

3.6 Disassembly

3.6.1 The procedures discussed herein will enable you to disassemble the system in a manner that is both safe and efficient. The procedure is intended to be independent of any actions associated with the disassembly of the hospital. However, hose lines located inside a TEMPER must be removed before the tent can be disassembled.

WARNING

Use of non-sterile disposable rubber gloves is recommended when handling wet components of the WWMS. Contact Preventive Medicine personnel for further guidance on this subject.

3.6.2 Prior to disassembly of the WWMS, prepare at least 5-gallons of disinfectant solutions. The solution is made by mixing 16-ounces (approximately 2-cups) of household bleach (Sodium Hypochlorite, 0.525%) into 5-gallons of potable water. Use a 5-gallon "Jerry Can" for holding the disinfectant. The working solution is corrosive and will bleach items made of cloth and other liquid absorbing material. Take care not to spill the solution on clothing and boots.

3.6.3 Locate the sink or funnel at the most distant location of the medical facility. **NOTE**: there may be duplicate distant locations, so additional disinfectant should be prepared. With the system in normal operation, pour about one gallon of disinfectant into the plugged sink or funnel (closed ball valve). Allow the solution to sanitize the sink or funnel part for a minute, then remove the sink plug or open the ball valve. Allow the disinfectant solution to be drawn into the WWMS hoses and to the collection tank.

3.6.4 Use the disinfectant solution for ALL sink and funnel locations. More disinfectant solution may be necessary to properly sanitize those components.

3.6.5 Shut down the pump when the sound changes (to appear that it pumping air instead of liquid) to indicate that **ALL** disinfectant solution has passed through the system and is now in the collection tank.

NOTE

Allow the pump to remove as much of the disinfectant solution as possible before disassembly.

3.6.6 Begin disassembly of the WWMS at the point farthest form the collection tank or where TEMPER must be taken down.

NOTE

As wastewater hoses become disconnected, realize that some liquid may be trapped within the hose. Take action to place the lowest point of hoses where they can drain without leakage on TEMPER flooring or on tent material.

3.6.7 Disconnect the hoses from the sink or funnel, one at a time. Ensure that recently disconnected hose is raised high enough so that any liquid will drain out.

CAUTION

When removing hoses from a TEMPER, use caution to ensure that the fittings do not damage the tent flooring.

3.6.8 Do not replace the field sink drain hose assemblies. The new drain hose assemblies installed as part of this system will remain with the field sinks. The old, unused drain hose assemblies may be stored with the equipment or handed to medical maintenance personnel.

3.6.9 Allow sufficient time for the hose assemblies and other components to dry out or otherwise reduce the liquid trapped in the hoses to manageable levels.

3.6.10 Separate the Wye fittings and the Hamilton Sink drain adapters for storage.

3.6.11 Collect all hose assemblies at the location of the Skip Box, Materiel Handling. Place one end of a hose assembly against the inside wall of a cage. Feed the longer hoses into the cage first and work toward the center. Use the shorter pieces to fill in the voids in the center.

3.6.12 As much as possible, store similar fittings together.

3.6.13 Disconnect the pump from its power source and wind the cord around the handle. This will keep it from dragging when the pump is moved.

3.6.14 Remove the adapter fittings installed on the suction and discharge chambers of the pump. Soak these components in the sanitizing solution for at least one minute.

NOTE

On disassembly of the pump, remove the inlet and outlet fittings to prevent breaking the suction or discharge chamber castings.

3.6.15 Tilt the pump so that its suction chamber is up and the discharge chamber is aimed towards the ground. Pour one gallon of the sanitizing solution into the suction chamber and allow it to run out the discharge chamber. Do not let the liquid enter the pump motor.

3.6.16 Secure or tie the fittings, removed in step i. to the pump handle. This will keep them from becoming lost during transport or storage.

3.6.17 Physically examine the work area to ensure that no fittings or hose assemblies have been overlooked.

3.6.18 Prior to moving the WWMS, ensure that all components of the set are together. Use the inventory list to ensure that nothing is missing.

3.7 Preventive Maintenance. The following preventative checks and services should be done daily in addition to the operational checks detailed in paragraph 3.5, above. They should also be done before storing or moving the system.

3.7.1 *Pump*. See separate chapter.

3.7.2 *Hose Assemblies*. Check hoses for abrasions, cuts, or gouges. Check for:

3.7.2.1 The presence of bulges in the hose or seepage at the hose fittings during operations.

3.7.2.2 Inspect for rust and deterioration on coupling halves and clamps.

3.7.3 *Funnel Assembly*. Cleaning the screen requires removing the funnel from the stand assembly prior to removal of the screen. If an attempt is made to remove the screen before removing the funnel from the stand assembly, the screen may tilt. This action may allow large solid material to be introduced into the WWMS and could clog hoses or damage the pump. Clean funnel assembly with sanitizing solution.

3.7.4 *Water Storage Tanks*. Operator, Maintenance, and PMCS are addressed in the applicable Technical Manuals.

3.7.4.1 TM 5-5430-216-12&P. Operator and Organization Maintenance Instruction, Repair Parts and Special Tools List for Tank Fabric, Collapsible, 20,000 Gallon Water.

3.7.4.2 TM 5-5430-226-12. Technical Manual, Operator's and Unit Maintenance Manual for 20,000 Gallon, Collapsible Fabric Tank.

3.7.4.3 TM 10-5430-226-20P. Technical Manual, Unit Maintenance, Repair Parts and Special Tools List for 20,000 Gallon, Collapsible Fabric Tank.

3.7.4.4 TM 10-5430-237-12&P. Operator and Unit Maintenance Manual (including repair parts and special tools list) Collapsible Fabric Tanks, Water Storage, 3000 Gallons.

REPAIR PROCEDURES

3-8 Repair Procedures. The WDWWMS Maintenance Set contains an initial stock of repair parts and tools necessary to maintain the system. This set is fielded with the system. As parts are replaced or used in support of the WDS and WWMS the user is responsibility to replenish the components as needed.

3.8.1 *Pump*. See separate chapter.

3.8.2 *Broken, Torn or Punctured Hoses*. The principle behind repairing damaged hose is to make two good hoses from one damaged hose..

3.8.2.1 Use a hacksaw to cut the hose squarely and remove the damaged section. If the short section is 2-feet or less, remove and retain the universal coupling if it is in useable condition. Dispose of hose pieces shorter than 2-feet.

NOTE

Wash hacksaw blade in a dilute bleach solution or hot soapy water after each use to prevent contamination of the hacksaw blade.

3.8.2.2 Place a hose clamp (from the maintenance set) over the newly cut end.

3.8.2.3 Insert a Universal Quick Disconnect Coupling Half in the cut end as far as it will go.

3.8.2.4 Position the hose clamp near the body of the coupling half.

3.8.2.5 Tighten the clamp and trim the excess metal strip. Excess metal that is not trimmed must be flattened against the clamp with a hammer. If there are sharp edges, remove them with a small file.

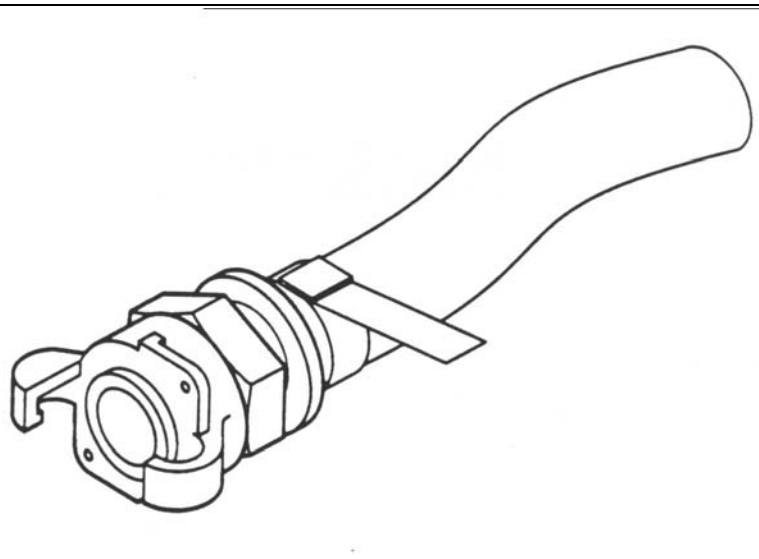

Figure 3-22
Hose Repair

NOTE

The cut ends of banding material are sharp enough to cause deep cuts and tear clothing. Use a file to dull or smooth the sharp edge. Use tape to cover the edge if necessary to prevent cuts during handling.

3.8.2.6 Repeat steps 3.8.2.2 through 3.8.2.5 for the other piece of hose.

3.8.2.7 Do not attempt to repair the Hose Assembly, Rubber (NSN: 6545-01-434-9627, PN: 13229E7226) hose if it breaks within 1-foot of the coupling assembly. Replace the entire assembly.

3.8.3 *Universal Quick Disconnect, Coupling Half, Hose Fittings and Wye fittings*. The only repair performed on these parts consists of replacement of the rubber gaskets. Cracked or broken fittings must be replaced.

CHAPTER 4
WASTE-WATER AUGMENTATION SET (WWAS)
Medical Force 2000 (MF2K) 296-Bed Configuration

INTRODUCTION

4.1 General. This augmentation set is designed to allow for the split-based operations of the Hospital Unit Surgical (HUS) and Hospital Unit Base (HUB) of the MF2K Combat Support Hospital.

COMPONENTS

4.2 Components

4.2.1 *Cam-Lock Connections*. As in the Water Distribution Set (WDS), components of this set use cam-lock fittings. Cam-lock is a quick disconnection system that requires no special training or tools. There are no threads on the parts or hoses to be connected. To use cam-lock fittings, the dust cap or plug is removed from each hose end, then insert the male end fitting into the female end of the other fitting. Pull the levers back towards the hose to cam-lock the two parts together. There are some steps to be followed in making and breaking a hose connection. These steps are discussed elsewhere in this manual. Cam-Lock connections are used for potable water connections within the system.

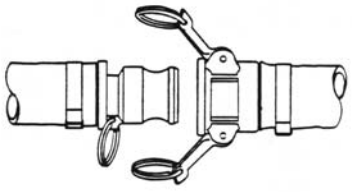

Figure 4-1
Cam-Lock Connection

4.2.2 *Coupling Halves*. The Universal Quick Disconnect (or coupling half) is made of galvanized steel and incorporates a rubber gasket to provide a watertight seal when the halves are connected. Two coupling halves will allow the connection of:

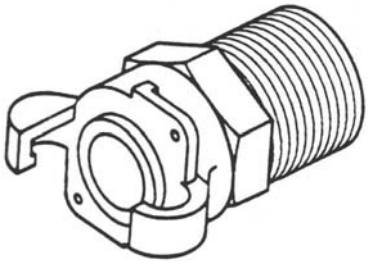

Figure 4-2
Coupling Half
Universal Quick Disconnect

4.2.2.1 two wastewater hoses,

4.2.2.2 a wastewater hose and the Pump Assembly, Diaphragm (NSN: 4320-01-440-7388),

4.2.2.3 a wastewater hose and a Valve, Ball (NSN: 4820-01-440-5916)

4.2.2.4 a wastewater hose and a Wye, Quick Disconnect (NSN: 4730-00-496-5952)

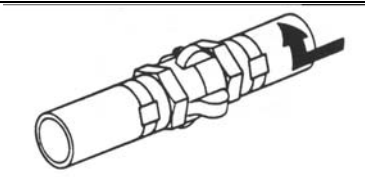

Figure 4-3
Coupling Connection

4.2.2.5 With two exceptions, all connections in the WWMS use universal quick disconnect. The two exceptions are:

- Sink Drain Adapter
- Hose Assembly, Rubber used with the Field Sinks and the Ultrasonic Cleaners.

4.2.3 *Water Storage Tanks*. The Waste-Water Augmentation contains; LIN T19033 – Tank, Fabric Collapsible, 3,000 Gallon Capacity – 2 each (one for water distribution and one for wastewater collection).

Figure 4-4
Tank Assembly, Fabric, Collapsible (3,000 Gallon – Onion Type)

4.2.4 *Water Pumps*

4.2.4.1 Pump Unit, Centrifugal. The water pump contained within this set and used for potable water distribution is the Pump Unit, Centrifugal, 65 GPM [NSN 4320-01-440-4421 or NSN 4320-01-506-5922]. It has a 220-volt, 3-phase, totally enclosed, fan-cooled, electric motor. Each water pump is supplied with an integral power cord (40') that terminates in a male Class "L" power connector. The plug interfaces directly with the DEPMEDS electrical distribution system. Each pump is outfitted with a male and female, 1½-inch cam-lock connection. There is one pump in the WDS. One pump will serve the primary water distribution loop of the hospital, and the other is used to augment or maintain pressure through the secondary loops. For the MF2K configuration, a third pump is located in the Waste-Water Augmentation Set, Hospital, DEPMEDS (WWAS) (LIN: W49603) (NSN: 6545-01-435-6013). The third pump will be used in the event that a Hospital Unit Base (HUB) and a Hospital Unit Surgical (HUS) operate independently.

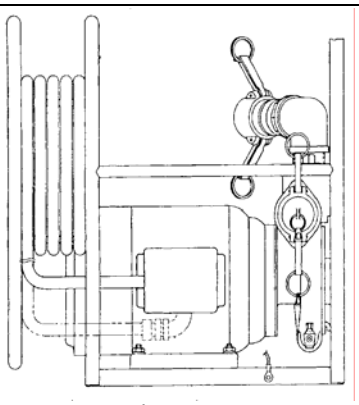

Figure 4-5
Pump Unit, Centrifugal, 65 GPM (Potable Water)

CAUTION

Two persons are required to lift or carry a water pump.

4.2.4.2 Pump Unit, Reciprocating. The wastewater pump contained within this set and used for wastewater evacuation is the Pump Unit, Reciprocating, [NSN: 4320-01-440-4421]. The electric motor driven pump is a portable, frame mounted, unit. It is designed to evacuate wastewater at the maximum rate of 2,600 gallons per hour, at 60 strokes per minute. The pump is equipped with a ¾-HP (horsepower), capacitor start, ball bearing motor.

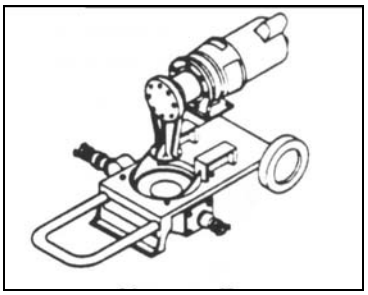

Figure 4-6
Pump Unit, Reciprocating

4.2.5 *Hoses*. The hoses that are contained within the WWAS are:

4.2.5.1 Potable water hoses:

4.2.5.1.1 Hose Assembly, Nonmetallic (NSN: 4720-01-438-8338) (PN: 13225E9136-14) 5-feet in length, 1-inch diameter.

4.2.5.1.2 Hose Assembly, Nonmetallic (NSN: 4720-01-175-5958) (PN: 13229E9136-12) 10-feet in length, 1-inch diameter.

4.2.5.1.3 Hose Assembly, Nonmetallic (NSN: 4720-01-177-3714) (PN: 13225E9136-13) 20-feet in length, 1-inch diameter.

4.2.5.1.4 Hose Assembly, Nonmetallic (NSN: 4720-01-438-8337) (PN: 13225E9136-15) 50-feet in length, 1-inch diameter.

4.2.5.1.5 Hose Assembly, Nonmetallic (NSN: 4720-01-438-8336) (PN: 13225E9136-17) 5-feet in length, 1½-inch diameter.

4.2.5.1.6 Hose Assembly, Nonmetallic (NSN: 4720-01-438-7779) (PN: 13225E9135-9) 10-feet in length, 1½-inch diameter.

4.2.5.1.7 Hose Assembly, Nonmetallic (NSN: 4720-01-438-8343) (PN: 13225E9136-9) 10-feet in length, 1½-inch diameter.

4.2.5.1.7 Hose Assembly, Nonmetallic (NSN: 4720-01-438-8341) (PN: 13225E9136-10) 20-feet in length, 1½-inch diameter.

4.2.5.1.8 Hose Assembly, Nonmetallic (NSN: 4720-01-140-6228) (PN: 13225E9136-4) 20-feet in length, 4-inch diameter.

4.2.5.2 Wastewater Hoses:

4.2.5.2.1 Hose Assembly, Rubber (NSN: 4720-01-434-9646) (PN: 13229E7223-1) 5-feet in length, 1-inch diameter.

4.2.5.2.2 Hose Assembly, Rubber (NSN: 4720-01-434-9594) (PN: 13229E7223-2) 10-feet in length, 1-inch diameter.

4.2.5.2.3 Hose Assembly, Rubber (Drain hose for field sink) (NSN: 4720-01-434-9627) (PN: 13229E7226) 10-feet in length, 1-inch diameter.

4.2.5.2.4 Hose Assembly, Rubber (NSN: 4720-01-434-9605) (PN: 13229E7223-3) 20-feet in length, 1-inch diameter.

4.2.5.2.5 Hose Assembly, Rubber (NSN: 4720-01-434-9649) (PN: 13229E7223-4) 50-feet in length, 1-inch diameter.

4.2.5.2.6 Hose Assembly, Rubber (NSN: 4720-01-434-9638) (PN: 13229E5746-4) 50-feet in length, 1½ inch diameter.

4.2.6 *Fittings and Valves*

4.2.6.1 Potable water

4.2.6.1.1 Valve, Check (NSN: 4820-01-440-5919) (PN: 13229E7197). This valve is used to keep water in the potable hose line from reversing flow.

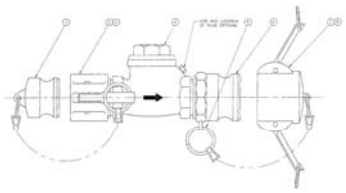

Figure 4-7
Valve, Check

4.2.6.1.2 Valve, Gate, 1-inch female, 1-inch male (NSN: 4820-01-440-7798) (PN: 13229E7167). When used with individual water users, such as field sinks and nozzles this valve controls the rate of flow. It is also used at the beginning of secondary loops and long one-way water lines. Used this way, repairs or changes in the secondary loops can be made without interrupting water supply to the rest of the hospital.

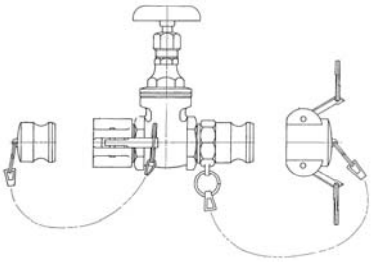

Figure 4-8
Valve, Gate, 1-inch female, 1-inch male

4.2.6.1.3 Valve, Gate,1½-inch female, 2-inch male (NSN: 4820-01-440-8302) (PN: 13229E7177). This valve is attached to the female cam-lock of the Reducer, 4-inch male to 2-inch female (NSN: 4730-01-186-0821) (PN: AA59326XI-1-10) which will be used on the Tank Assembly, Fabric Collapsible (20,000 gallon) (LIN: T12938, NSN: 5430-01-406-0507).

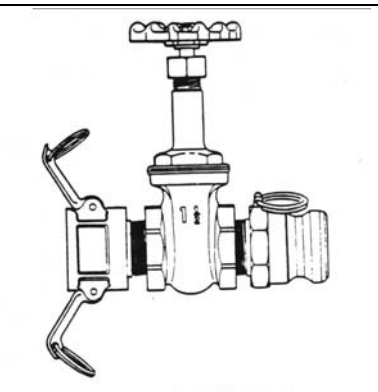

Figure 4-9
Valve, Gate, 1½-inch female, 2-inch male

4.2.6.1.4 Valve, Gate, 2-inch female, 1½-inch male (NSN 4820-01-440-8306) (PN: 13229E7178). This valve is attached to the male cam-lock of the Reducer, 4-inch female x 2-inch male (NSN: 4730-01-064-0560, PN: AA59326XI-1-9) which will be used on the Tank Assembly, Fabric Collapsible (20,000 gallon) (LIN: T12938, NSN: 5430-01-406-0507).

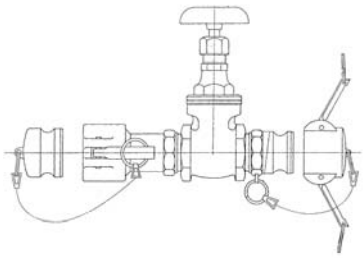

Figure 4-10
Valve, Gate, 2-inch female, 1½-inch male

4.2.6.1.5 Valve, Gate, 4-inch female, 4-inch male (NSN: 4820-01-440-8765) (PN: 13229E7169).

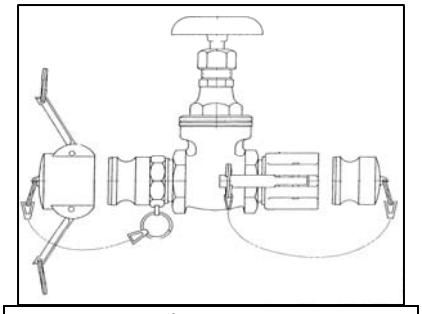

Figure 4-11
Valve, Gate, 4-inch female, 4-inch male

4.2.6.1.6 Valve, Globe, 1½-inch female, 1½-inch male (NSN: 4820-01-440-8765) (PN: 13229E7169). This valve is attached to the 1½-inch loop, immediately after the beginning of a 1-inch loop. It is also used when multiple water tanks are arranged in parallel. In this application, the valve is manually adjusted to control the rate of flow in the system.

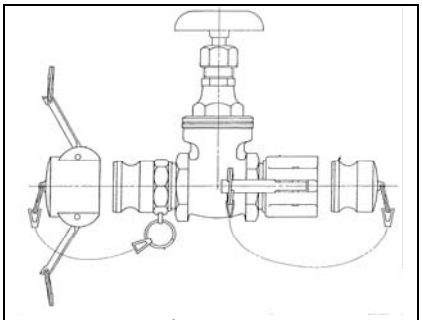

Figure 4-12
Valve, Globe, 1½-inch female, 1½-inch male

4.2.6.1.7 Tee Assembly, Quick Disconnect, 1½-inch female x 1½-inch male x 1-inch male (NSN: 4730-01-440-4609) (PN: 13229E7172). This fitting is used at each place where the one-way feeder lines branch off to the individual users, such as CMS, pharmacy, X-Ray, laboratory, etc. It is also used at the beginning and end of the secondary loop.

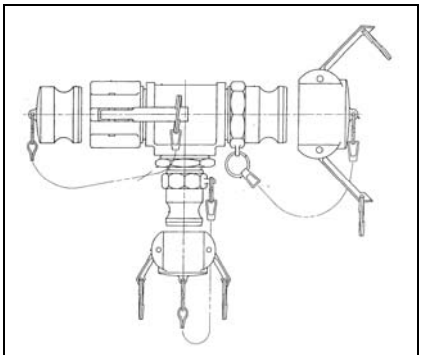

Figure 4-13
Tee Assembly, Quick Disconnect, 1½-inch female x 1½-inch male x 1-inch male

4.2.6.1.8 Tee Assembly, Quick Disconnect, 1½-inch male, 1½-inch male, 1½-inch female (NSN: 4730-01-440-4633) (PN: 13229E7182). This fitting is used on the return side of the primary loop.

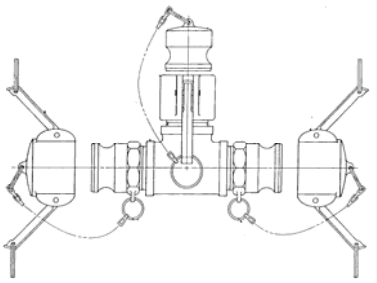

Figure 4-14
Tee Assembly, Quick Disconnect, 1½-inch male, 1½-inch male, 1½-inch female

4.2.6.1.9 Tee Assembly, Quick Disconnect, 1½-inch female, 1½-inch female, 1½-inch male (NSN: 4730-01-440-4615) (PN: 13229E7181). This fitting is located between the Tank Assembly, Fabric Collapsible (5,000 Gallon) and the Pump Unit, Centrifugal, 65 GPM [NSN 4320-01-440-4421] when two or more Tank Assembly, Fabric Collapsible (5,000 Gallon) are employed in parallel.

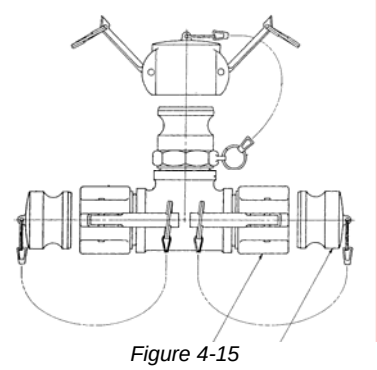

Figure 4-15
Tee Assembly, Quick Disconnect, 1½-inch female, 1½-inch female, 1½-inch male

4.2.6.1.10 Tee Assembly, Quick Disconnect, 1½-inch female, 1½-inch male x ¼-inch male (NSN: 4730-01-487-3575) is used to connect the Hypochlorination Unit (NSN: 4610-01-435-4884) (PN: WAL-1031-96) to the primary loop.

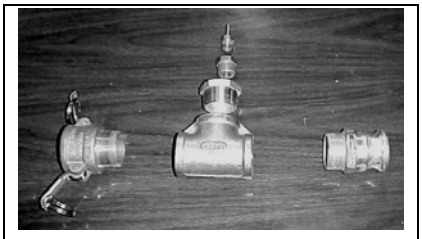

Figure 4-16
Tee Assembly, Quick Disconnect, 1½-inch female, 1½-inch male x ¼-inch male

4.2.6.1.11 Coupling Assembly, Quick Disconnect, 1-inch female x 1-inch female (NSN: 4730-01-440-8569) (PN: 13229E7173). This coupling assembly is commonly referred to as a "Gender Changer". It is used when a male outlet is connected to a second male connection and as a connection on the Hamilton Sink connections for the ISO containers.

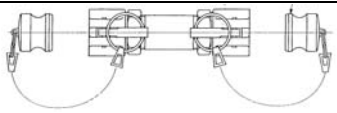

Figure 4-17
Coupling Assembly, Quick Disconnect, 1-inch female x 1-inch female

4.2.6.12 Plug, Quick Disconnect (NSN: 4730-01-415-6403) (PN: 13229E7170). This fitting is used in conjunction with Adapter, Straight Hose to Boss (NSN: 4730-01-415-6420) (PN: 13229E7195) to connect field sinks to the water loop.

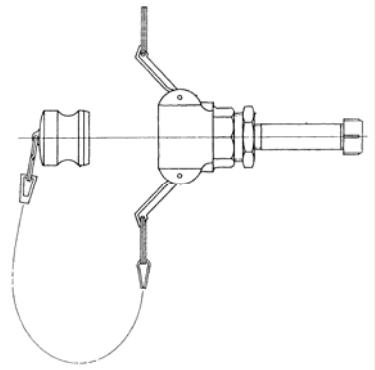

Figure 4-18
Plug, Quick Disconnect

4.2.6.13 Adapter, Straight Hose to Boss (NSN: 4730-01-415-6420) (PN: 13229E7195). This fitting is used in conjunction with Plug, Quick Disconnect (NSN: 4730-01-415-6403, PN: 13229E7170) to connect field sinks to the water loop. This is the first example where both connections are not cam-lock.

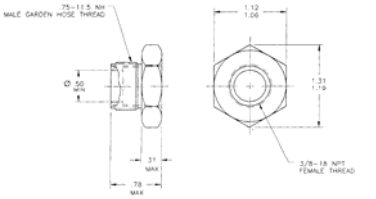

Figure 4-19
Adapter, Straight Hose to Boss

4.2.6.2 Wastewater

4.2.6.2.1 Adapter, Sink. (NSN: 6545-01-434-9630) (PN: 13229E7224) The sink adapter consists of a pipe to hose adapter, a reducing pipe coupling, and a universal quick disconnect coupling half.

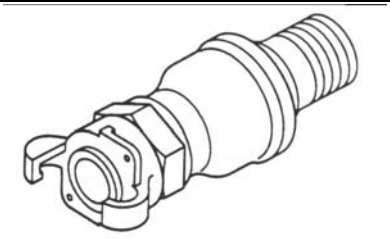

Figure 4-20
Adapter, Sink

4.2.6.2.2 Wye, Quick Disconnect
(NSN: 4730-00-496-5952) (PN: WW-C-633-M)

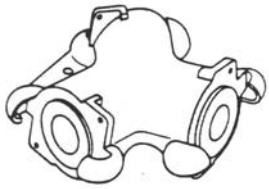

Figure 4-21
Wye, Quick Disconnect

4.2.6.2.3 Valve, Ball. (NSN: 4820-01-440-5916) (PN: 13225E7225) The ball valve provides a means to close off the WWMS. It is used near the funnel and stand assemblies.

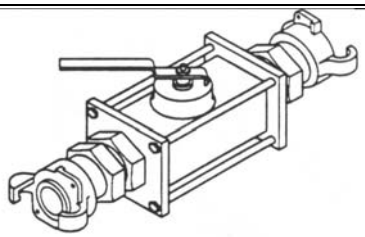

Figure 4-22
Valve, Ball

4.2.7 *Other Components*

4.2.7.1 Potable Water

4.2.7.1.1 Pipe Assembly, Potable Water (NSN: 4610-01-440-4086) (PN: 13229E7162). This component measures the water pressure in the distribution system. This gauge is generally placed at the return end of the main loop. Its precise location depends on how the tanks are employed. **THE PRESSURE GAUGE IS FRAGILE.** When not in use, store it in the Case Electrical-Electronic Test (NSN: 6625-01-449-2857) (PN: 13229E7189).

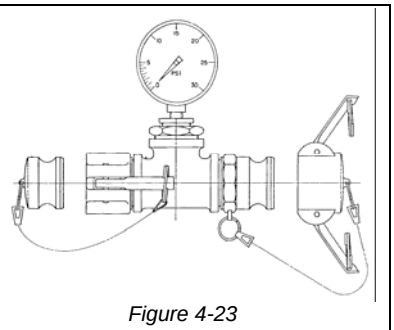

Figure 4-23
Pipe Assembly, Potable Water
(Pressure Gauge)

4.2.7.1.2 Pipe Assembly, Potable Water (NSN: 4610-01-440-4088, PN: 13229E7165). The water distribution system uses a flow meter that measures flow rates up to 100 GPM. It is placed at the end of the primary loop, immediately before the pressure gauge. **FLOW METERS ARE FRAGILE.** When not in use, store them in the Case Electrical-Electronic Test (NSN: 6625-01-449-2857) (PN: 13229E7189).

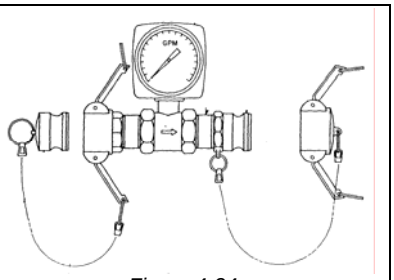

Figure 4-24
Pipe Assembly, Potable Water
(Flow Meter)

4.2.7.1.3 Indicator Assembly (NSN: 4610-01-440-4090) (PN: 13229E7163). This assembly is used to monitor water flow through the distribution system. **THIS ASSEMBLY IS FRAGILE.** When not in use, store it in the Case Electrical-Electronic Test (NSN: 6625-01-449-2857) (PN: 13229E7189).

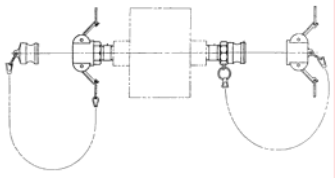

Figure 4-25
Indicator Assembly

4.2.7.1.4 Case Electrical-Electronic Test (NSN: 6625-01-449-2857) (PN: 13229E7189). This case is used to store the pressure gauges, flow meters, indicator assembly and color comparator.

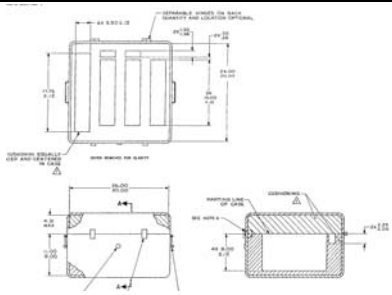

Figure 4-26
Case Electrical-Electronic Test

4.2.7.1.5 Comparator, Color (NSN: 6630-01-044-0334) (PN: U25377). The equipment operator to visually determine the turbidity of the supplied water uses the comparator.

4.2.7.1.6 Stand Assembly, Distribution Nozzle (NSN: 4930-01-120-7426) (PN: 13225E9140). This assembly is used to suspend the Nozzle Assembly, Water (NSN: 4610-01-440-8834) (PN: 13229E7168).

Figure 4-27
Stand Assembly, Distribution Nozzle

4.2.7.1.7 Nozzle Assembly, Water (NSN: 4610-01-440-6834) (PN: 13229E7168). The nozzle is provided to supply water to those parts of the hospital that are not connected to the water distribution system. Other uses for this nozzle are outlined in the principles of installation section of this chapter.

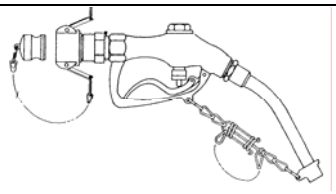

Figure 4-28
Nozzle Assembly, Water

4.2.7.1.7 Strainer, Sediment (NSN: 4730-01-440-7662) (PN: 13229E7179). This fitting is used to strain or remove large particles that could damage the water pumps in the water distribution system.

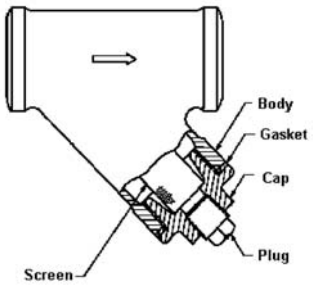

Figure 4-29
Strainer, Sediment

4.3.7.2 Storage Devices. The Water Distribution Set, MF2K comes with two possible configurations of storage devices.

4.3.7.2.1 The older configurations of the WDS come with:

4.3.7.2.1.1 Storage and Retrieval Materiel System (NSN: 3990-01-449-1997) (PN: 13229E7185). This cage-like component is used to store set fittings. The rack is divided into four compartments. This assembly is moved in the same manner as the Reel Assembly. When full, this can weigh as much as 250 pounds. This item is replaced by the Skip, Box, Materiel Handling (NSN: 3990-01-505-5922) in the newer configurations.

4.3.7.2.1.2 Reel Assembly, Hose (NSN: 4940-01-449-3840) (PN: 13229E7186-1). This reel assembly is designed for the storage of hoses in the WDS. Store ONLY potable water hoses (tan colored) in these reels. This item is replaced by the Skip, Box, Materiel Handling (NSN: 3990-01-505-5922) in the newer configurations.

4.3.7.2.2 The newer configurations of this set come with Skip Box, Materiel Handling (NSN: 3990-01-505-5922). This container is used for the storage of hoses and fittings used in the distribution set.

4.3.7.3 Can, Water, Military (NSN: 7240-00-089-3827) (PN: MIL-C-43613). This is used for mixing the Sodium, Hypochlorite Technical (NSN: 6810-01-358-4336, PN: 13229E0923) and water for use in the Hypochlorination Unit (NSN: 4610-01-435-484) (PN: WAL-1031-96).

4.3.7.4 Pump Unit, Centrifugal (NSN: 4320-01-440-4421) (PN: 13229E7159). The water pumps are supplied with the water distribution set. The water pumps are outfitted with quick-disconnect (cam-lock) fittings, and are rated at producing a 65-GPM water flow.

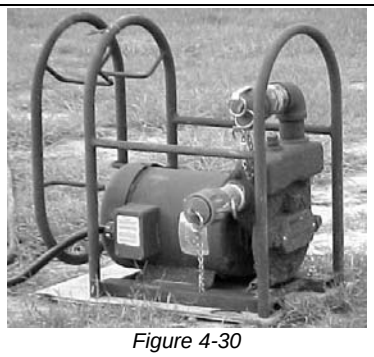

Figure 4-30
Pump Unit, Centrifugal

4.3.7.5 Hypochlorination Unit (NSN: 4610-01-435-4884) (PN: WAL 1031-96). This item is designed to treat and chlorinate the water within the water distribution system. The addition of chlorine based material to the water supply helps retard bacterial and fungal growth within the hoses. It is also designed to provide the capability to flush (hypochlorinate) the water lines.

Figure 4-31
Hypochlorination Unit

4.3.7.6 Wastewater: Pipe, Culvert, Metallic (NSN: 4710-00-057-7252) (PN: MIL-P-236)

4.3.7.7 Multi-use:

4.3.7.7.1 Channel, Hose Protector (subsurface) (NSN: 4720-01-440-4928) (PN: 13229E7175). This item is used to protect hoses.

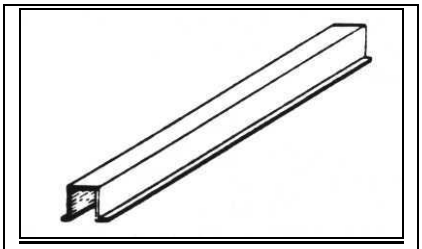

Figure 4-32
Channel, Hose Protector (Subsurface)

4.3.7.7.2 Channel, Hose Protector (surface) (NSN: 4720-01-440-4925) (PN: 13229E7176). This item is used to protect hoses.

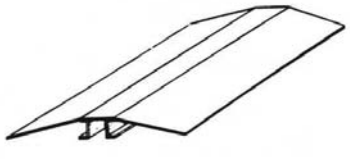

Figure 4-33
Channel, Hose Protector (Surface)

CHAPTER 5
WATER DISTRIBUTION CONNECTION SET

INTRODUCTION

5.1 General

5.1.1 This chapter describes the components as well as the assembly, operation, and disassembly of the Water Distribution Connection Set.

5.1.2 This set was designed to provide a connection to the potable water portion of the Force Provider Water Distribution and Waste System. The combination of hoses, fittings and valves provides maximum flexibility in setting up this set. The composition of this set will allow:

5.1.2.1 Operation of the potable water distribution portions of the system without using the water tanks.

5.1.2.2 Filling of the potable water tanks from Force Provider assets.

5.1.2.3 Flexibility in filling potable water tanks at a distance of 500-feet from the tank.

COMPONENTS

5.2. Components

5.2.1 *Cam-Lock Connections*. All of the connections in this set are cam-lock. Cam-lock is a quick connection system that requires no special training or tools. There are no threads. You simply insert the male end of the fitting into the female end of another fitting and pull the levers back to lock the two parts together. There are, however, precise steps in making and breaking this connection. These steps are discussed in chapter 2 of this manual.

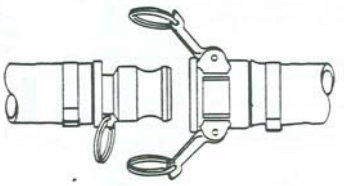

Figure 5-1
Cam-Lock Connections

5.2.2 *Reducer, Quick Disconnect (4-inch Female x 2-inch Male)* (NSN 4730-01-064-0560) (PN AA59326XI-1-9). This reducer is used on the supply side of the Water Tank, Fabric Collapsible, 20,000.

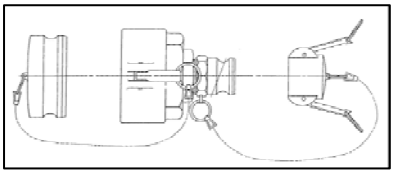

Figure 5-2
Reducer, Quick Disconnect, 4-inch female, 2-inch male

5.2.3 *Hose Assembly, Nonmetallic* (1½-inch x 50-foot) (NSN 4720-01-438-8335) (PN 13225E9136-18). The hoses used in this set are tan in color, and has a blue stripe running its length indicating use for potable water.

5.2.3.1 When sections of hose are connected, they are bulky and heavy. To avoid injury, limit the amount of hose carried to 60 feet. The set comes with either hose reels that can be rolled or skip box, materiel that can be stacked and moved with a forklift. This is an effective way to move large amount of hose. **DO NOT DRAG THE HOSE**. You will damage it and the connections.

5.2.3.2 There 10 sections of this hose in the set, allowing for a connection of up to 500 feet away.

5.2.4 *Valve, Gate* (2" F x 1 1/2" M) (NSN 4820-01-440-8306) (PN 13229E7178). This valve is attached to either the female cam-lock of the Water Tank, Fabric Collapsible, 3,000 gallon (NSN: 5430-01-170-6984), or to the female cam-lock of the adapter for the Water Tank, Fabric Collapsible, 5,000 gallon (NSN: 5430-01-506-1999), or Water Tank, Fabric Collapsible, 20,000 (5430-01-406-0507).

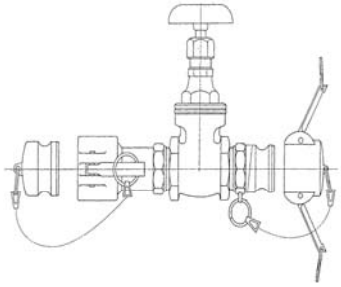

Figure 5-3
Valve, Gate, 2-inch female, 1½-inch male

5.2.5 *Skip Box, Materiel Handling* (NSN 3990-01-505-5922) (PN W-2-404-836-SP-SJF). This cage is used for the storage of hoses and fittings used in the connection set.

ASSEMBLY

5.3 Assembly

5.3.1 This paragraph provides some general guidelines and a few hard rules on how to assembly the set

5.3.2 First, determine the intended use that is needed:

5.3.2.1 Operation of the potable water distribution portions of the system without using the water tanks,

5.3.2.2 Filling of the potable water tanks from Force Provider assets, or

5.3.2.3 Flexibility in filling potable water tanks at a distance of 500-feet from the tank.

5.3.3 Next, determine the distance required for the connection. The set is equipped with 10-each, 50-foot sections of 1½-inch hose.

5.3.4 Layout

5.3.4.1 Operation of the potable water distribution portions of the system without using the water tanks.

5.3.4.1.1 Lay out the Valve, Gate (2" F x 1 1/2" M) (NSN 4820-01-440-8306) (PN 13229E7178) next to the beginning of the primary water line. This is determined by selecting the point of the line where the line would normally connect to the discharge side of the water tank.

5.3.4.1.2 Lay out one section of the 50-foot hose assembly. **DO NOT CONNECT THE HOSES YET. DO NOT REMOVE THE CAPS OR PLUGS.**

5.3.4.1.3 Position a Pump Unit, Centrifugal (NSN 4320-01-440-4421 or 4320-01-506-4459), with the discharge side of the pump facing the input to the primary water line.

5.3.4.1.4 Lay out the other required sections of the 50-foot hose assemblies.

5.3.4.2 Filling of the potable water tanks from Force Provider assets.

5.3.4.2.1 Lay out the Valve, Gate (2" F x 1 1/2" M) (NSN 4820-01-440-8306) (PN 13229E7178) next to the inlet port of the water tank.

5.3.4.2.2 Lay out one section of the 50-foot hose assembly. **DO NOT CONNECT THE HOSES YET. DO NOT REMOVE THE CAPS OR PLUGS.**

5.3.4.2.3 Position a Pump Unit, Centrifugal (NSN 4320-01-440-4421 or 4320-01-506-4459), with the discharge side of the pump facing the inlet port of the water tank.

5.3.4.2.4 Lay out the other required sections of the 50-foot hose assemblies.

5.3.4.3 Flexibility in filling potable water tanks at a distance of 500-feet from the tank.

5.3.4.3.1 Lay out the Valve, Gate (2" F x 1 1/2" M) (NSN 4820-01-440-8306) (PN 13229E7178) next to the inlet port of the water tank.

5.3.4.3.2 Lay out one section of the 50-foot hose assembly. **DO NOT CONNECT THE HOSES YET. DO NOT REMOVE THE CAPS OR PLUGS.**

5.3.4.3.3 Position a Pump Unit, Centrifugal (NSN 4320-01-440-4421 or 4320-01-506-4459), with the discharge side of the pump facing the inlet port of the water tank.

5.3.4.3.4 Lay out the other required sections of the 50-foot hose assemblies.

5.3.4.5 Connection

5.3.4.5.1 Connect all of the hose and valve connections, starting at either the water tank, or beginning of the primary water line.

5.3.4.5.2 Select open sockets on the electrical distribution panels. Make sure the circuit is off. Plug the pump's electrical plugs into the electrical sockets.

5.3.4.5.3 Connect the distribution line into the Provider Source for water.

5.3.4.5.4 Open the gate valve.

5.3.4.5.5 Start the pump.

DISASSEMBLY

5.4 Disassembly

5.4.1 The procedures discussed in this paragraph will enable you to disassemble the set in a manner that is efficient and minimizes the chance of contamination. The procedure is intended to be independent of any other actions associated with the disassembly of the hospital.

5.4.2 Disconnecting the cam-lock fittings is not the first thing done in disassembly. Procedures for accomplishing this task are discussed in chapter 2, at paragraph 2.6.2.

5.4.3 Make sure that the hoses are drained thoroughly.

CAUTION

To prevent contaminants from entering the system, reattach dust caps and dust plugs to fittings and hoses before storage.

5.4.4 When rolling hoses, leave the far end of the hose open to allow any remaining water to drain. If possible, keep that end off the ground. If this is not possible, rinse the end of the hose before attaching the dust cap or dust plug.

Figure 2-52
Suggested Method of Rolling 1½ inch Hose

PREVENTIVE MAINTENANCE

5.5 Preventive Maintenance. The following preventative checks and services should be done periodically during operation. They should also be done prior to storing the equipment following completion of a mission or field training exercise.

5.5.1 *Pump*. Operator, Maintenance and PMCS are addressed in TM 5-4320-274-14&P and elsewhere in this manual.

5.5.2 *Hose.* Check hoses for abrasions, cuts, and gouges. Check for –

- Presence of bulges or seepage during operations.
- Presence and condition of locking levers.
- Presence and condition of hose clamps.
- Presence of cap and plug attached by chain and key rings.
- Abrasions on cam-lock fittings.
- Presence and condition of gaskets inside the female fittings and caps.

5.5.3 *Valve, Gate*. Check –

- For cracks in the body of the fitting or valve.
- For leakage at the threads
- For broken or bent handles on gate valves.
- To ensure that the nut at the top of the rising stem gate valve is secure.

REPAIR PROCEDURES

5.6. Repair Procedures. Part of the Water Distribution and Wastewater Management System (WDWWMS) is the WDWWMS Maintenance Set that includes an assortment of repair parts and critical tools to maintain the system. This set is fielded with the remainder of the system. It is the user's responsibility to replenish the components as needed.

5.6.1 *Hose*. The repair procedures discussed here applies to the hoses.

5.6.1.1 Broken, torn, or punctured hose. The principal behind repair services for a damaged hose is to make two good hose sections from one damaged one. Dispose of pieces of hose shorter than 2-feet.

5.6.1.1.1 Use a hacksaw to cut the hose and remove the damaged portion.

5.6.1.1.2 Place two hose clamps (from the maintenance set) over the newly cut end.

5.6.1.1.3 Insert a hose coupling in the newly cut end, as far as it will go. The coupling must be the opposite gender of the cam-lock fitting on the other end of the hose.

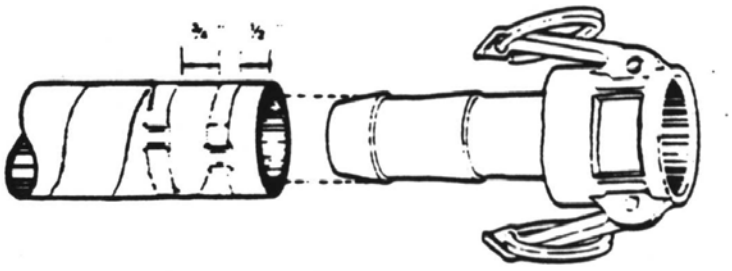

Figure 5-5
Hose Repair

5.6.1.1.4 Position the hose clamps near the end of the fitting.

5.6.1.1.5 Tighten the hose clamps and trim off the excess.

5.6.1.1.6 Attach key rings, chain, and caps (or plugs).

5.6.1.1.7 Repeat steps 5.6.1.1.2 through 5.6.1.1.6 for the other piece of hose.

5.6.2 *Valve, Gate*. Replace missing or damaged caps, plugs, chains, and rings as needed. The complete valve assembly is made up of individual parts that may be requisitioned separately. Should the valve become unserviceable, retain the serviceable parts for use in reassembling the fitting or valve.

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CHAPTER 6

PUMP UNIT, RECIPROCATING
13229E7222, ELECTRIC MOTOR DRIVEN
(EDSON CORPORATION, MODEL 120EWA)

NSN 4320-01-440-7388

INTRODUCTION

6.1 General. This chapter is for your use in operating and maintaining the Edson Corporation, Model 120EWA, electric motor driven reciprocating pump.

6.2 Maintenance Forms and Records. Maintenance forms and records that you are required to use are explained in TM 38-750.

6.3 Equipment Serviceability Criteria (ESC). This equipment is not covered by an ESC.

6.4 Description

6.4.1 The electric motor driven pump (figure 6.1) is a portable, frame mounted, unit designed to evacuate wastewater at the maximum rate of 2,600 gallons per hour at 60 strokes per minute.

6.4.2 The pump is equipped with a ¾-HP (horsepower), capacitor start, ball bearing motor.

6.4.3 If you need a detailed description of any component of the electric motor driven pump, refer to the applicable organizational maintenance information.

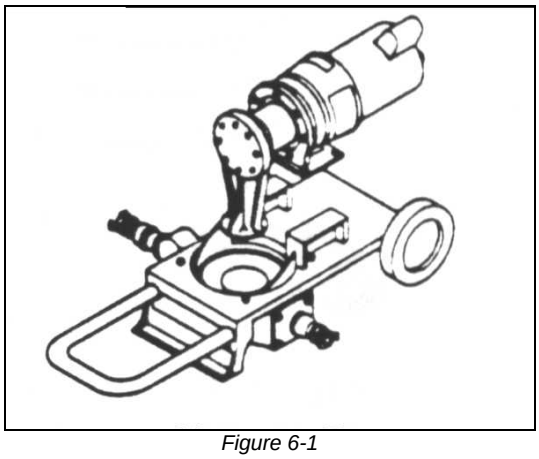

Figure 6-1
Pump Unit, Reciprocating (side view)

PRINCIPLES OF INSTALLATION

6.5 General.

6.5.1 The information in this chapter provides guidance to help plan the location of the pumps in the Wastewater Management Sets.

6.5.2 Locate pumps on each loop close to the collection, or discharge, site. Note that the power cable on the pump is 40-feet long. **DO NOT USE AN EXTENSION CORD**. Elevate electrical connections on wooden blocks above areas where puddles may form. The pump should be supplied by a dedicated branch circuit protected by a fuse or circuit breaker rated at no more than 15 amps.

PREVENTIVE MAINTENANCE

6.6 Preventive Maintenance. The following preventative checks and services should be done **DAILY**. They should also be done prior to storing or moving the pump.

6.6.1 Check the valves. If the discharge valve does not seat properly, vacuum lift is lost. If the intake valve does not seal, pump efficiency will be lost.

6.6.2 Check the diaphragm for leaks and wear.

6.6.3 Grease the eccentric drive daily with 4 to 6 strokes of a grease gun. (Grease, General Purpose [NSN 9150-01-226-4315] [PN Pacesetter EP-65] using Lubricating Gun, Hand [NSN 4930-00-253-2478] [PN MIL-G-3859] located in the maintenance set.)

TROUBLE SHOOTING AND MAINTENANCE

6.7 Trouble Shooting and Maintenance. The following is guide to the trouble shooting and maintenance of the pump.

6.7.1 Diaphragm and Flapper Valves. These are the primary moving parts of the pump. If the diaphragm leaks, pump efficiency will be lost. If the discharge valve does not seat properly, vacuum lift will be lost. If the intake valve does not seal, pump efficiency will be lost.

6.7.1.1 To check, use a vacuum gauge on the intake of the pump. A reading of 8 to 10-inches Hg indicates all valves and seals are working properly. In lieu of a gauge, place hand over intake and check vacuum. Strong suction indicates good sealing by the valves.

6.7.1.2 Look for wear and swelling on the valve, rubber (PN 161-G-107). Swelling can prevent a good seal. Replace valves as required.

NOTE

Over-tightening Valve Rubber Washer and Weights on the inlet and outlet chambers can cause distortion of the valves and poor seal performances.

6.7.1.3 Check diaphragms for Leaks and wear. Replace as required with Diaphragm Valve, Flat (NSN 4820-01-393-5286) (PN 113-0).

6.7.1.4 Grease eccentric drive every 48 to 72 hours of continuous run operation at full RPM, or as required. (Grease, General Purpose [NSN 9150-01-226-4315] [PN Pacesetter EP-65] using Lubricating Gun, Hand [NSN 4930-00-253-2478] [PN MIL-G-3859] located in the maintenance set.)

6.7.2 Troubleshooting Guide. See Table 6.1 below:

Table 6-1, Troubleshooting

Problem Cause Corrective Action
1. PUMP IS PUMPING, NO LIQUID IS BEING PUMPED
Clogged inlet or discharge line, clogged inlet or discharge chamber Locate and unclog line
No vacuum
Blocked discharge valve (held open) Clear valve
Hole in inlet hose Repair or replace hose
Loose fitting on inlet Make air tight
Worn discharge valve rubber Replace valve rubber
Worn diaphragm Replace diaphragm
Inlet vertical head too high or discharge head too high See set-up instructions above.
Motor not working Check electrical connections
Pump base chamber has solids trapped and preventing pump from cycling Clear pump base chamber. Increase pump speed to prevent solid from dropping out Use strainer on inlet hose

Table 6-1, Troubleshooting (continued)

Problem
Cause
Corrective Action

2. PUMP LEAKS

Loose head ring bolts
Tighten

Loose standard/bolt
Tighten

Diaphragm worn/split
Replace

Discharge vertical head too high

3. PUMP BASE CHAMBER KEEPS FILLING WITH SOLIDS.

CAUTION
THIS PROBLEM CAN LEAD TO COMPLETE STOPPING OF PUMP AND DAMAGE TO DRIVE OR PUMP.

Pump running too slow or with too short a stroke to move solids.
Run pump faster, extend stroke, no faster than 60 cycles per minute.

Overall head is too great to move solids through.
Reduce head.

GENERAL OPERATING GUIDELINES

6.8 General.

6.8.1 Diaphragm pumps are suction pumps. They are designed to create a vacuum on the intake (up) stroke of the pump and positively displace the pump chamber on the down stroke.

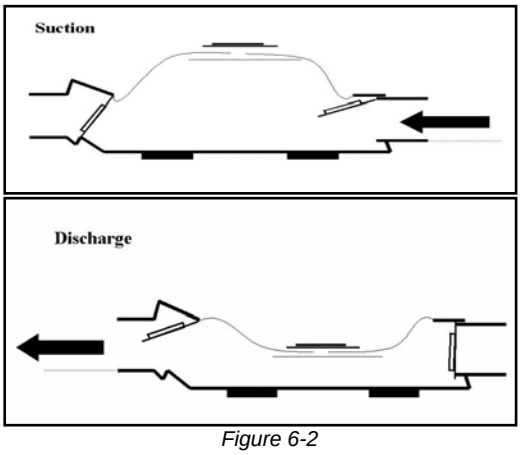

Figure 6-2
Suction and Discharge

6.8.1.1 Direction of flow and the vacuum lift of the pump are maintained by opposed inlet and outlet flapper valves.

6.8.1.2 Once the vacuum is filled with liquid, lifting it vertically is easier on the intake stroke.

6.8.1.3 The force required to displace the pump chamber on the down stroke increases with the height of the discharge above the pump and the volume of liquid in the discharge head.

6.8.1.4 Any restrictions to flow decreases lift on the intake side and increases force required for discharge.

6.8.1.5 Increase in viscosity is a resistance to flow and requires more time for liquid to flow; an increase in viscosity decreases lift and discharges heads.

CAUTION
This pump is not designed to be used in cold weather. Using this pump in freezing weather will cause the pump to burn out.

6.8.2 Insure Vacuum

6.8.2.1 All inlet fittings and hoses should be airtight. Use appropriate tape (Tape, Antisiezing [NSN 8030-00-889-3534] [PN A-A-58092]), on all threaded fittings.

6.8.2.2 Flapper Valves must be making good seals.

6.8.2.3 Diaphragm must have good seal and be free of holes.

6.8.2.4 Pump should be level when in use.

6.8.3 Prevent Clogging. Run the pump at speed necessary to move solids through the hoses and pump base.

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CHAPTER 7

HYPOCHLORINATION UNIT
Waltron Model WAL 1031-96

NSN: 4610-01-435-4884

INTRODUCTION

7.1 General

7.1.1 This chapter is for your use in operating and maintaining the Waltron (WAL 1031-96) Hypochlorination Unit. This unit is a components of the following sets:

LIN	NSN	Nomenclature
W53055	6545-01-435-6014	WATER DISTRIBUTION SET
W53055	6545-01-507-7170	WATER DIS SE HOSP MF2K 2003
W49603	6545-01-435-6013	WASTEWATER AUGMENTATION SET, HOSP
W53123	6545-01-491-4732	WATER DISTRIBUTION SET 84
Z00133	6545-01-502-4969	WATER DISTRIBUTION SET 164

7.1.2 This chapter provides information relative to the operation, preventive maintenance, and organizational maintenance of the item.

7.2 Maintenance Forms and Records. Maintenance forms and records that you require are explained in TM 38-750.

7.3 Equipment Serviceability Criteria (ESC). This equipment is not covered by an ESC.

7.4 Description. This unit is designed to provide the capability of injecting Sodium Hypochlorite into the potable water lines for the prevention of fungus and bacterial growth in the lines. This unit delivers up to 0.55 gal/hr of a Hypochlorite solution into the lines, against a pressure of up to 150 psi maximum. The chemical feed rate is controlled by adjusting pump stroke length and pump frequency over 0-100% of range. It is electrically powered at 110/120V, 50/60HZ. When connected to the potable water line, this unit will chlorinate the water unattended from 24 hours to 4 days, depending on the amount, flow rate, and quality of the water being treated.

Figure 7-1
Hypochlorination Unit

7.5 Operation of the Hypochlorination Unit

7.5.1 The instructions in this chapter are published for the information and guidance of the personnel responsible for the operation of the pump units.

7.5.2 The operator must know how to perform every operation of which the hypochlorination unit is capable, The operator must also know the steps and coordination required prior to operating this unit.

7.5.3 This chapter gives instructions for set-up, starting, and stopping the pump units, and operation of the unit.

7.6 Set-Up

7.6.1 Connect the tubing from tank suction line to lower intake port on pump.

7.6.2 Attach the tubing located between the relief and backpressure valve to the upper discharge port on the pump.

7.6.3 Attach one end of the 25-foot discharge tubing to the end of the injection nozzle assembly, and the other end to the Tee Assembly, Quick Disconnect, 1½-inch Female x 1½-inch Male x ¼-inch Male (NSN 4730-01-487-3575).

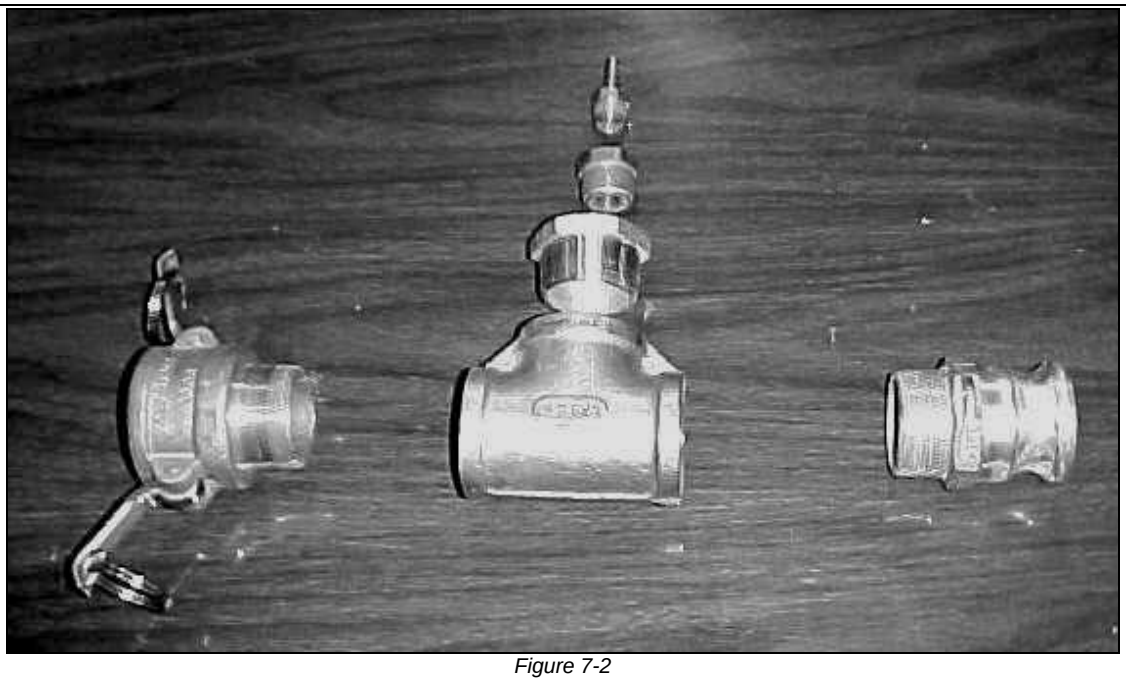

Figure 7-2
Tee Assembly
1½-inch Female x 1½-inch Male x ¼-inch Male

7.6.4 Using the Can, Water, Military, Plastic 5-gallon (NSN 7240-00-089-3827) which is packed in the Water Distribution Set MILVAN, add potable water to the tank. Do not fill tank to maximum at this point, 20-50L (5-13 gallons) is recommended.

7.6.5 Coordinate with the Preventive Medicine Specialist (MOS 91S) to test the available potable water, and determine the amount of granular Sodium Hypochlorite which must be added to the tank.

7.6.6 The Preventive Medicine Specialist (91S) should add the appropriate amount of grandular hypochlorite to tank, determined by site and use requirements.

NOTE

First dissolve the sodium Hypochlorite in the Can, Water, Military, Plastic, 5-gallon which has been filled with 1 to 5 gallons of water before adding it to tank. This is a good pre-mix procedure.

The recommended dosage is a minimum Chlorine level of 65% which would mean adding 60 oz. of Calcium Hypochlorite per 100L of potable water.

7.6.7 Fill tank to 100L (approximately 26½-gallons) with potable water.

7.7 Start-Up

7.7.1 Plug unit into a 110V/60HZ power source.

NOTE

The point stroke length should be set at Zero and the stroke frequency set at Ext.

CAUTION

Stroke length must NEVER be moved until flow has started.

7.7.2 Set frequency knob to internal (100%). This starts maximum flow.

7.7.3 Loosen locking screw on stroke length and set to MAX (100%).

7.7.4 Run the unit at these settings until the flow starts and the lines are air free. (Approximately 5-minutes)

7.7.5 Reduce the stroke length and frequency until the desired rate is achieved.

NOTE

For best pump efficiency, use similar settings on stroke length and frequency.

7.7.6 Tighten locking screw on stroke length knob.

7.7.8 Proceed with chemical feed. The Preventive Medicine Specialist (91S) should test the system for chlorine level and adjust if necessary.

7.8 Shut Down

7.8.1 Set stroke length to Zero. Set stroke frequency to Ext.

7.8.2 Disconnect power.

7.9 Operation of Equipment

7.9.1 The operation of the hypochlorination unit is largely automatic. The operator should maintain watch over failure to perform to rated efficiency and chlorine level in the tank. **Proper care and maintenance will insure efficient operation.**

7.9.2 The chlorine level should be checked daily by the Preventive Medicine Specialist (91S).

7.9.3 The shut-down and start-up procedures should be followed at every refill of the Tank, Fabric Collapsible.

OPERATION UNDER UNUSUAL CONDITIONS

7.10 Operation in Extreme Cold

7.10.1 Keep the unit free of snow and ice. Cover the unit when not in use. Provide a suitable shelter for the unit during outside operation.

7.10.2 To avoid freezing, drain the tank and purge the lines after operation.

7.10.3 In extreme cold, do not use the unit outside.

CAUTION
Do NOT use this unit in temperatures below freezing without the Heaters, Water (NSN: 6520-01-493-7423 being installed and properly operating.

7.11 Operation in Extreme Heat

7.11.1 Protect the unit from the direct rays of the sun.

7.11.2 Keep the unit clean.

7.12 Operation in Dusty or Sandy Areas

7.12.1 Shield the unit from dust. Take advantage of natural barriers that offer protection from blowing sand and/or dust, or erect a suitable shield, if necessary.

7.12.2 Prevent dust and/or sand from entering the tank of the unit. If dust and/or sand is present in the tank, flush the entire unit until clean and then follow the set-up procedures.

7.13 Operation under Rainy or Humid Conditions

7.13.1 Cover the unit with a waterproof cover when outside and inoperative. During operation, take advantage of natural barriers that offer protection from storms, or erect a suitable shelter to protect the unit.

7.13.2 Keep the power cord and parts free of moisture and clean.

7.14 Inspecting and Servicing the Unit

7.14.1 Inspection

7.14.1.1 Make a complete visual inspection of the unit to assure that all of the accessories, attachments, publications, and required items have been delivered with the hypochlorination unit.

7.14.1.2 Inspect the unit for loss of parts or hardware.

7.14.1.3 Inspect the unit to ensure that the pump has been properly mounted on the 100 Liter tank. If it has not been mounted, or if it has come loose, mount the pump on the mounting block. Secure be tightening the four supplied set screws.

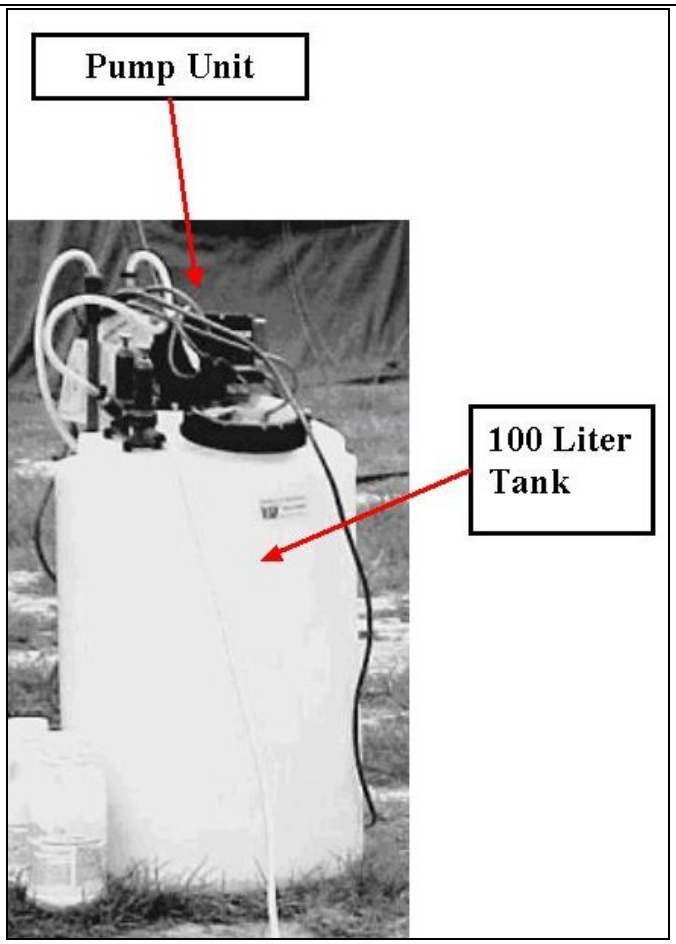

Figure 7.3
Hypochlorination Unit

7.14.2 Servicing the Unit

7.14.2.1 The unit is shipped complete and ready for operation.

7.14.2.2 Perform the daily preventive maintenance checks and services (tables 7.1, 7.2 and 7.3).

Table 13.1 Preventive Maintenance Checks and Services (PMCS) – Before Operation

Sequence Number	Item to be Inspected Procedure
1	ELECTRIC POWER CORD AND CONNECTIONS Inspect the power cord for breaks and frayed connections Check for loose connections
2	100 LITER TANK Inspect the tank for holes and leaks Inspect threads to mount the tank top to the unit Inspect the pump mounting block for damage
3	PUMP UNIT Inspect the pump unit for damage Check the control panel shield to determine if it has a tight fit to the pump controls Check the control knobs for damage and tightness Check to make sure that the set screws are present and functioning properly Check to see that the hose from the tank is properly connected to the pump unit and that it is unclogged and undamaged

Table 13.2 Preventive Maintenance Checks and Services (PMCS) – During Operation

Sequence Number	Item to be Inspected Procedure
1	PUMP UNIT Inspect the entire unit for operational damage
2	TANK Inspect the tank for operational damage and leaks
3	HYPOCHLORINATION UNIT Clean the hypochlorination unit with clean, clear water, rinse, and wipe dry

Table 13.3 Preventive Maintenance Checks and Services (PMCS) – After Operation

Sequence Number	Item to be Inspected Procedure
1	TANK Inspect for dirt, foreign matter, and excessive discoloration Check for leaks and other damage
2	PUMP UNIT Inspect for dirt, foreign matter, and damage. The control cover shall be clean and fit properly. The controls shall move freely (without binding). The pump unit shall show no damage. The pump unit shall be securely mounted on the tank mount.

WARNING

Sodium Hypochlorite is a caustic substance. Contact with acids releases a poison gas (chlorine), and is light sensitive. It is a corrosive substance that may cause burns to skin and eyes. It is harmful by ingestion, inhalation, or through prolonged skin contact.

Use in a well-ventilated area and protect eyes.

CAUTION

Sodium Hypochlorite is hazard class 8 (Corrosive Substance), packing group III (Minor Danger) substance.

This item is packed with the Maintenance Set and care should be exercised in its use, storage, and transportation.

TROUBLESHOOTING

7.15 General

7.15.1 This section contains troubleshooting information for locating most of the operating troubles that may develop in the hypochlorination unit. Each malfunction for an individual component is followed by a list of tests or inspections that will help you determine probable causes and corrective actions to take. You should perform the tests/inspections and corrective actions in the order listed.

7.15.2 This manual cannot list all of the malfunctions that may occur, nor all of the tests or inspections and corrective actions. If a malfunction is not listed, or it is not corrected by the listed corrective actions, notify your supervisor.

NOTE

Before you use this table, be sure that you have performed all of the applicable operating checks.

Table 13.4 Troubleshooting

Malfunction
Test or Inspection
Corrective Action

PUMP

1. PUMP FAILS TO FUNCTION PROPERLY

Step 1: Check for loose or corroded power cord connections
Tighten loose connections, clean corroded connections
Step 2: Check power source voltage
If the power source is too low, too high, or unbalanced, connect to a proper power source

2. UNIT FAILS TO CHLORINATE THE WATER LINES

Step 1: Check to see that the feed line from the tank to the pump is properly connected
Connect the feed line correctly
Step 2: Check the feed line from the tank to the pump for clogs and kinks
If clogged, disconnect the feed line, clear the clog and reconnect the feed line
If the feed line is kinked, straighten the feed line or replace

TANK

3. TANK FAILS TO MAINTAIN FLUID LEVEL

Check tank for leaks
If leak is found, replace unit

MOVEMENT TO A NEW SITE

7.16 Dismantling for Movement

7.16.1 Disconnect the power chord from the power source.

7.16.2 Disconnect one end of the 25-foot discharge tubing from the Tee Assembly, 1½-inch Female x 1½-inch Male x ¼-inch Male.

7.16.3 Disconnect the Tee Assembly, 1½-inch Female x 1½-inch Male x ¼-inch Male from the potable water line.

7.16.4 Cover the 1½-inch Female end of the tee assembly with Plug, Quick Disconnect, 1½-inch (NSN 4730-00-823-5316). Cover the 1½-inch Male end of the tee assembly with Cap, Quick

Disconnect 1½-inch (NSN 4730-00-869-5246), to prevent foreign material from entering the tee assembly.

7.16.5 Coil and tie the discharge tubing to the unit.

7.16.6 Coil and tie the power cord to the unit.

7.16.7 Pack the tee assembly with the Hypochlorination Unit.

7.17 Reinstallation after Movement. Refer to paragraph 7.6 and reinstall the hypochlorination unit.

REPAIR PARTS, SPECIAL TOOLS, AND EQUIPEMENT

7.18 Tools and Equipment. Organizational personnel for maintenance of this unit require no special tools or equipment. Basic tools will be used.

7.19 Organizational Maintenance Repair Parts. There are no repair parts for the Hypochlorination Unit. The Tee Assembly is listed in the RPSTL portion of this manual.

PREVENTIVE MAINTENANCE CHECKS AND SERVICES (PMCS)

7.20 General To ensure that the hypochlorination unit is ready for operations at all times, it must be systematically inspected so that defects may be discovered and corrected before they results in serious damage or failure. The necessary PMCS to be performed are listed in paragraph 13.20. All deficiencies and shortcomings will be recorded, together with the corrective action taken on DA Form 2404 (Equipment Inspections and Maintenance Worksheet).

7.21 **Preventive Maintenance Checks and Services**. Refer to table 13.5 for the applicable PMCS.

Table 13-5 Preventive Maintenance Checks and Services (PMCS) – Organizational Maintenance

M – Monthly Q – Quarterly

Interval Sequence No. M	Q	Item to be Inspected Procedure
1	7	APPEARANCE OF EQUIPMENT Clean entire unit with clean, clear water, rinse, and dry
2	8	ELECTRICAL LINES AND CONNECTIONS Inspect power cord for breaks and frayed insulation Check for loose connections
3	9	TANK Check for leaks and excessive discoloration Check pump mounting block
4	10	PUMP Check to see that pump is correctly mounted to the tank Inspect pump control panel cover for cracks or other damage. The exterior surface should be clean, free of dust, dirt, and grease. Inspect the pump control for damage.
5	11	HARDWARE
6	12	HYPOCHLORINATION UNIT Inspect the entire unit for operational damage. Check each component for wear and damage.

STORAGE

7.22 Preparation of Equipment for Shipment

7.22.1 General. Detailed instructions for the preparation of the hypochlorination unit for domestic shipment are outlined in this section. Preservation will be accomplished in a sequence that will not require the operation of previously preserved components.

7.22.2 Inspection. The unit will be inspected for any unusual conditions, such as damage and pilferage. Inspection of individual components will be as outlined in the PMCS section of this chapter.

7.22.3 Cleaning and Drying

7.22.3.1 Clean all surfaces of the hypochlorination unit with clean water and dry thoroughly.

7.22.3.2 Flush the unit with clean potable water.

7.22.3.3 Empty the tank by removing the drain plug and flush with fresh, potable water in accordance with local legal environmental requirements.

7.22.4 Depreservation Guide. The Depreservation Guid (DA Form 2258) is not applicable to this unit.

7.22.5 Power Cord. The power cord will be coiled and tied securely to the unit.

7.22.6 Discharge Tubing. The 25-foot discharge tubing will be coiled and securely tied to the unit.

7.22.7 Basic Issue Items. All basic issue items will be packed with the hypochlorination unit in the Water Distribution Set or Waste Water Augmentation Set MILVAN.

7.23 Loading Equipment for Shipment. The hypochlorination unit is not heavy, so one person can lift the unit into the MILVAN.

7.24 Inspection and Maintenance of Equipment in Limited Storage. Every 90 days, the hypochlorination units must be inspected as outlined in “Preventive Maintenance Checks and Services (PMCS)- Organizational Maintenance”, Table 7-5.

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APPENDIX A
ACRONYMNS

CMS	Central Materiel Supply
CPC	Corrosion Prevention and Control
CSH	Combat Support Hospital
DA	Department of the Army
DA PAM	Department of the Army Pamphlet
EIR	Equipment Improvement Recommendation
HUB	Hospital Unite Base
HUS	Hospital Unit Surgical
ISO	International Standardization Organization
JCN	Joint Control Number
LIN	Line Item Number
MF2K	Medical Force 2000
MRI	Medical Re-engineering Initiative
NSN	National Stock Number
ORD	Operational Requirements Document
PN	Part Number
PQDR	Product Quality Deficiency Report
QA	Quality Assurance
QC	Quality Control
RPSTL	Repair Parts and Special Tools List
SF	Standard Form
TAMMS	The Department of the Army Maintenance Management System
TM	Technical Manual
UA	Unit Assemblage
WDS	Water Distribution Set
WDWWMS	Water Distribution and Wastewater Management System
WWMS	Wastewater Management Set

DEFINITIONS

Joint Control Number (JCN). The joint control number is an interim identification number for an item undergoing the standardization process. When an item is submitted for standardization it is assigned a JCN, pending assignment of a national stock number (NSN).

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APPENDIX B
PUBLICATIONS AND FORMS

Publications

DA PAM 738-750	The Department of the Army Maintenance Management System (TAMMS)
TB 55-8115-200-23	Technical Bulletin, Standards of Maintenance for MILVAN Containers
TM 5-4320-274-14&P	Technical Manual, Operator and Organization Maintenance Instruction, Repair Parts and Special Tools List for Pump Unit, Centrifugal, Frame Mounted
TM 5-5430-216-12&P	Technical Manual, Operator and Organization Maintenance Instruction, Repair Parts and Special Tools List for Tank Fabric, Collapsible, 20,000 Gallon Water
TM 5-5430-226-12	Technical Manual, Operator's and Unit Maintenance Manual for 20,000 Gallon, Collapsible Fabric Tank
TM 9-6150-228-13&P	Technical Manual, Operator, Unit and Direct Support Maintenance Manual (including repair parts and special tools list) for Power Distribution Panel, 100KW
TM 10-5430-226-20P	Technical Manual, Unit Maintenance, Repair Parts and Special Tools List for 20,000 Gallon, Collapsible Fabric Tank
TM 10-5430-237-12&P	Operator and Unit Maintenance Manual (including repair parts and special tools list) Collapsible Fabric Tanks, Water Storage, 3000 Gallons
TM 55-8115-200-23&P	Technical Manual, Organizational and Direct Support Maintenance Manual (including repair parts and special tools list), Container, General Cargo; MILVAN

Forms

SF 368	Product Quality Deficiency Report

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APPENDIX C

INVENTORY LISTS

WATER DISTRIBUTION SET, HOSPITAL, DEPMEDS
WASTE WATER MANAGEMENT SET, HOSPITAL DEPMEDS
WASTE WATER AUGMENTATION SET, HOSPITAL, DEPMEDS
WATER DISTRIBUTION AND WASTE WATER MANAGEMENT SYSTEM MAINTENANCE SET, HOSPITAL, DEPMEDS

WATER DISTRIBUTION SET (WDS), MF2K
2000 CONFIGURATION

NSN					
FSC	NIIN	P/N	Description	QTY	U/M
3990	01-449-1997	13229E7185	Storage and Retrieval Materiel System	4	EA
4320	01-440-4421	13229E7159	Pump Assembly, Centrifugal	2	EA
4520	01-493-7423	111739	Heater, Water, 9,000 Watts	12	EA
4610	01-435-4884	WAL-1031-96	Hypochlorination Unit	1	EA
4610	01-440-4086	13229E7162	Pipe Assembly, Potable	1	AY
4610	01-440-4088	13229E7165	Pipe Assembly, Potable	2	AY
4610	01-440-4090	13229E7163	Indicator, Assembly	2	AY
4610	01-440-6834	13229E7168	Nozzle Assembly, Water	7	AY
4720	01-140-6288	13225E9136-4	Hose Assembly, Nonmetallic	2	EA
4720	01-175-5958	13225E9136-12	Hose Assembly, Nonmetallic	43	EA
4720	01-177-3714	13225E9136-13	Hose Assembly, Nonmetallic	37	EA
4720	01-438-7779	13225E9135-9	Hose Assembly, Nonmetallic	6	EA
4720	01-438-8335	13225E9136-18	Hose Assembly, Nonmetallic	2	EA
4720	01-438-8336	13225E9136-17	Hose Assembly, Nonmetallic	8	EA
4720	01-438-8337	13225E9136-15	Hose Assembly, Nonmetallic	15	EA
4720	01-438-8338	13225E9136-14	Hose Assembly, Nonmetallic	39	EA
4720	01-438-8341	13225E9136-10	Hose Assembly, Nonmetallic	26	EA
4720	01-438-8343	13225E9136-9	Hose Assembly, Nonmetallic	24	EA
4730	01-064-0560	AA59326XI-1-9	Reducer, Quick Disconnect	1	EA
4730	01-186-0821	AA59326XI-1-10	Reducer, Quick Disconnect	1	EA
4730	01-415-6403	13229E7170	Plug, Quick Disconnect	30	EA
4730	01-415-6420	13229E7195	Adapter, Straight, Hose to Boss	30	EA
4730	01-440-4091	13229E0361	Tee Assembly, Quick Disconnect	32	EA
4730	01-440-4609	13229E7172	Tee Assembly, Quick Disconnect	18	AY
4730	01-440-4613	13229E7174	Tee Assembly, Quick Disconnect	18	AY
4730	01-440-4615	13229E7181	Tee Assembly, Quick Disconnect	1	AY
4730	01-440-4633	13229E7182	Tee Assembly, Quick Disconnect	1	AY
4730	01-440-4931	13230E5716	Tee Assembly, Quick Disconnect	1	AY
4730	01-440-4933	13230E5717	Tee Assembly, Quick Disconnect	1	AY
4730	01-440-4938	13230E5715	Tee Assembly, Quick Disconnect	2	AY
4730	01-440-7662	13229E7179	Strainer, Sediment	1	EA
4730	01-440-8569	13229E7173	Coupling Assembly, Quick Disconnect	16	EA
4730	01-445-5188	13229E7190	Adapter Assembly, Quick Disconnect	1	EA
4730	01-487-3575		Tee Assembly, Quick Disconnect	1	AY
4730	01-499-8687	3629	Reducer, Quick Disconnect	6	EA
4730	01-499-8752	3630	Reducer, Quick Disconnect	6	EA
4820	01-440-5919	13229E7197	Valve, Check	1	AY
4820	01-440-7798	13229E7167	Valve, Gate	52	EA
4820	01-440-8302	13229E7177	Valve, Gate	5	EA
4820	01-440-8306	13229E7178	Valve, Gate	5	EA
4820	01-440-8765	13229E7169	Valve, Globe	4	EA
4930	01-120-7426	13225E9140	Stand Assembly, Distribution Nozzle	7	EA
4940	01-449-3850	13229E7186	Reel Assembly, Hose	15	EA

NSN					
FSC	NIIN	P/N	Description	QTY	U/M
6625	01-449-2857	13229E7189	Case, Electrical-Electronic Test	1	EA
6630	01-044-0334	U25377	Comparator, Color	1	EA
7240	00-089-3827	MIL-C-43613	Can, Water, Military	1	EA

Associated Support Items of Equipment (ASIOE)

NSN					
FSC	NSN	LIN	Description	QTY	U/M
5430	01-406-0507	T12938	Tank Assembly, Fabric Collaspible	1	EA
8115	01-241-7524	C13825	Container, Cargo	1	EA

WATER DISTRIBUTION SET (WDS), MF2K
2002 CONFIGURATION

NSN					
FSC	NIIN	P/N	Description	QTY	U/M
3990	01-505-5922		Cage, Wire, Folding	19	EA
4320	01-440-4421	13229E7159	Pump Assembly, Centrifugal	2	EA
4520	01-493-7423	111739	Heater, Water, 9,000 Watts	12	EA
4610	01-435-4884	WAL-1031-96	Hypochlorination Unit	1	EA
4610	01-440-4086	13229E7162	Pipe Assembly, Potable	1	AY
4610	01-440-4088	13229E7165	Pipe Assembly, Potable	2	AY
4610	01-440-4090	13229E7163	Indicator, Assembly	2	AY
4610	01-440-6834	13229E7168	Nozzle Assembly, Water	7	AY
4720	01-140-6288	13225E9136-4	Hose Assembly, Nonmetallic	2	EA
4720	01-175-5958	13225E9136-12	Hose Assembly, Nonmetallic	43	EA
4720	01-177-3714	13225E9136-13	Hose Assembly, Nonmetallic	37	EA
4720	01-438-7779	13225E9135-9	Hose Assembly, Nonmetallic	6	EA
4720	01-438-8335	13225E9136-18	Hose Assembly, Nonmetallic	2	EA
4720	01-438-8336	13225E9136-17	Hose Assembly, Nonmetallic	8	EA
4720	01-438-8337	13225E9136-15	Hose Assembly, Nonmetallic	15	EA
4720	01-438-8338	13225E9136-14	Hose Assembly, Nonmetallic	39	EA
4720	01-438-8341	13225E9136-10	Hose Assembly, Nonmetallic	26	EA
4720	01-438-8343	13225E9136-9	Hose Assembly, Nonmetallic	24	EA
4730	01-064-0560	AA59326XI-1-9	Reducer, Quick Disconnect	1	EA
4730	01-186-0821	AA59326XI-1-10	Reducer, Quick Disconnect	1	EA
4730	01-415-6403	13229E7170	Plug, Quick Disconnect	30	EA
4730	01-415-6420	13229E7195	Adapter, Straight, Hose to Boss	30	EA
4730	01-440-4091	13229E0361	Tee Assembly, Quick Disconnect	32	EA
4730	01-440-4609	13229E7172	Tee Assembly, Quick Disconnect	18	AY
4730	01-440-4613	13229E7174	Tee Assembly, Quick Disconnect	18	AY
4730	01-440-4615	13229E7181	Tee Assembly, Quick Disconnect	1	AY
4730	01-440-4633	13229E7182	Tee Assembly, Quick Disconnect	1	AY
4730	01-440-4931	13230E5716	Tee Assembly, Quick Disconnect	1	AY
4730	01-440-4933	13230E5717	Tee Assembly, Quick Disconnect	1	AY
4730	01-440-4938	13230E5715	Tee Assembly, Quick Disconnect	2	AY
4730	01-440-7662	13229E7179	Strainer, Sediment	1	EA
4730	01-440-8569	13229E7173	Coupling Assembly, Quick Disconnect	16	EA
4730	01-445-5188	13229E7190	Adapter Assembly, Quick Disconnect	1	EA
4730	01-487-3575	4730NCM010315	Tee Assembly, Quick Disconnect	1	AY
4730	01-499-8687	3629	Reducer, Quick Disconnect	6	EA
4730	01-499-8752	3630	Reducer, Quick Disconnect	6	EA
4820	01-440-5919	13229E7197	Valve, Check	1	AY
4820	01-440-7798	13229E7167	Valve, Gate	52	EA
4820	01-440-8302	13229E7177	Valve, Gate	5	EA
4820	01-440-8306	13229E7178	Valve, Gate	5	EA
4820	01-440-8765	13229E7169	Valve, Globe	4	EA
4930	01-120-7426	13225E9140	Stand Assembly, Distribution Nozzle	7	EA

NSN					
FSC	NIIN	P/N	Description	QTY	U/M
6625	01-449-2857	13229E7189	Case, Electrical-Electronic Test	1	EA
6630	01-044-0334	U25377	Comparator, Color	1	EA
7240	00-089-3827	MIL-C-43613	Can, Water, Military	1	EA

Associated Support Items of Equipment (ASIOE)

NSN					
FSC	NIIN	LIN	Description	QTY	U/M
5430	01-406-0507	T12938	Tank Assembly, Fabric Collaspible	1	EA
8115	01-241-7524	C13825	Container, Cargo	1	EA

WATER DISTRIBUTION SET (WDS), MF2K
2003 CONFIGURATION

NSN					
FSC	NIIN	P/N	Description	QTY	U/M
3990	01-505-5922		Cage, Wire, Folding	19	EA
4320	01-506-4459	13229E7159	Pump Assembly, Centrifugal	2	EA
4520	01-493-7423	111739	Heater, Water, 9,000 Watts	12	EA
4610	01-435-4884	WAL-1031-96	Hypochlorination Unit	1	EA
4610	01-440-4086	13229E7162	Pipe Assembly, Potable	1	AY
4610	01-440-4088	13229E7165	Pipe Assembly, Potable	2	AY
4610	01-440-4090	13229E7163	Indicator, Assembly	2	AY
4610	01-440-6834	13229E7168	Nozzle Assembly, Water	7	AY
4720	01-140-6288	13225E9136-4	Hose Assembly, Nonmetallic	2	EA
4720	01-175-5958	13225E9136-12	Hose Assembly, Nonmetallic	43	EA
4720	01-177-3714	13225E9136-13	Hose Assembly, Nonmetallic	37	EA
4720	01-438-7779	13225E9135-9	Hose Assembly, Nonmetallic	6	EA
4720	01-438-8335	13225E9136-18	Hose Assembly, Nonmetallic	2	EA
4720	01-438-8336	13225E9136-17	Hose Assembly, Nonmetallic	8	EA
4720	01-438-8337	13225E9136-15	Hose Assembly, Nonmetallic	15	EA
4720	01-438-8338	13225E9136-14	Hose Assembly, Nonmetallic	39	EA
4720	01-438-8341	13225E9136-10	Hose Assembly, Nonmetallic	26	EA
4720	01-438-8343	13225E9136-9	Hose Assembly, Nonmetallic	24	EA
4730	01-064-0560	AA59326XI-1-9	Reducer, Quick Disconnect	1	EA
4730	01-186-0821	AA59326XI-1-10	Reducer, Quick Disconnect	1	EA
4730	01-415-6403	13229E7170	Plug, Quick Disconnect	30	EA
4730	01-415-6420	13229E7195	Adapter, Straight, Hose to Boss	30	EA
4730	01-440-4091	13229E0361	Tee Assembly, Quick Disconnect	32	EA
4730	01-440-4609	13229E7172	Tee Assembly, Quick Disconnect	18	AY
4730	01-440-4613	13229E7174	Tee Assembly, Quick Disconnect	18	AY
4730	01-440-4615	13229E7181	Tee Assembly, Quick Disconnect	1	AY
4730	01-440-4633	13229E7182	Tee Assembly, Quick Disconnect	1	AY
4730	01-440-4931	13230E5716	Tee Assembly, Quick Disconnect	1	AY
4730	01-440-4933	13230E5717	Tee Assembly, Quick Disconnect	1	AY
4730	01-440-4938	13230E5715	Tee Assembly, Quick Disconnect	2	AY
4730	01-440-7662	13229E7179	Strainer, Sediment	1	EA
4730	01-440-8569	13229E7173	Coupling Assembly, Quick Disconnect	16	EA
4730	01-445-5188	13229E7190	Adapter Assembly, Quick Disconnect	1	EA
4730	01-487-3575	4730NCM010315	Tee Assembly, Quick Disconnect	1	AY
4730	01-499-8687	3629	Reducer, Quick Disconnect	6	EA
4730	01-499-8752	3630	Reducer, Quick Disconnect	6	EA
4820	01-440-5919	13229E7197	Valve, Check	1	AY
4820	01-440-7798	13229E7167	Valve, Gate	52	EA
4820	01-440-8302	13229E7177	Valve, Gate	5	EA
4820	01-440-8306	13229E7178	Valve, Gate	5	EA
4820	01-440-8765	13229E7169	Valve, Globe	4	EA
4930	01-120-7426	13225E9140	Stand Assembly, Distribution Nozzle	7	EA

NSN					
FSC	NIIN	P/N	Description	QTY	U/M
6625	01-449-2857	13229E7189	Case, Electrical-Electronic Test	1	EA
6630	01-044-0334	U25377	Comparator, Color	1	EA
7240	00-089-3827	MIL-C-43613	Can, Water, Military	1	EA

Associated Support Items of Equipment (ASIOE)

NSN					
FSC	NIIN	LIN	Description	QTY	U/M
5430	01-406-0507	T12938	Tank Assembly, Fabric Collaspible	1	EA
8115	01-241-7524	C13825	Container, Cargo	1	EA

WASTEWATER MANAGEMENT SET (WWMS), MF2K
2000 CONFIGURATION

NSN					
FSC	**NIIN**	**P/N**	**Description**	**QTY**	**U/M**
3990	01-449-1997	13229E7185-2	Storage and Retrieval System Materiel	1	EA
4320	01-440-7388	13229E7222	Pump Assembly, Diaphram	3	EA
4720	01-434-9594	13229E7223-2	Hose Assembly, Rubber	48	EA
4720	01-434-9605	13229E7223-3	Hose Assembly, Rubber	72	EA
4720	01-434-9627	13229E7226	Hose Assembly, Rubber	34	EA
4720	01-434-9638	13230E5746-4	Hose Assembly, Rubber	6	EA
4720	01-434-9646	13229E7223-1	Hose Assembly, Rubber	22	EA
4720	01-434-9649	13229E7223-4	Hose Assembly, Rubber	17	EA
4730	00-496-5952	WW-C-633-M	Wye, Quick Disconnect	48	EA
4730	01-064-0560	AA59326XI-1-9	Reducer, Quick Disconnect	1	EA
4730	01-186-0821	AA59326XI-1-10	Reducer, Quick Disconnect	1	EA
4820	01-440-5916	13225E7225	Valve, Ball	2	EA
4930	01-120-7426	13225E9140	Stand Assembly, Distribution Nozzle	2	EA
4940	01-434-9587	13229E7186-2	Reel Assembly, Hose	15	EA
4940	01-449-3840	13229E7186-1	Reel Assembly, Hose	2	EA
6545	01-434-9587	13229E7229	Funnel Assembly	2	EA
6545	01-434-9630	13229E7224	Adapter, Sink	16	EA

Associated Support Items of Equipment (ASIOE)

NSN					
FSC	**NIIN**	**LIN**	**Description**	**QTY**	**U/M**
5430	01-241-7524	C13825	Container, Cargo	1	EA
8115	01-406-0507	T12938	Tank Assembly, Fabric Collaspible	1	EA

WASTEWATER MANAGEMENT SET (WWMS), MF2K
2002 CONFIGURATION

NSN					
FSC	**NIIN**	**P/N**	**Description**	**QTY**	**U/M**
3990	01-505-5922		Cage, Wire, Folding	16	EA
4320	01-440-7388	13229E7222	Pump Assembly, Diaphram	3	EA
4720	01-434-9594	13229E7223-2	Hose Assembly, Rubber	48	EA
4720	01-434-9605	13229E7223-3	Hose Assembly, Rubber	72	EA
4720	01-434-9627	13229E7226	Hose Assembly, Rubber	34	EA
4720	01-434-9638	13230E5746-4	Hose Assembly, Rubber	6	EA
4720	01-434-9646	13229E7223-1	Hose Assembly, Rubber	22	EA
4720	01-434-9649	13229E7223-4	Hose Assembly, Rubber	17	EA
4730	00-496-5952	WW-C-633-M	Wye, Quick Disconnect	48	EA
4730	01-064-0560	AA59326XI-1-9	Reducer, Quick Disconnect	1	EA
4730	01-186-0821	AA59326XI-1-10	Reducer, Quick Disconnect	1	EA
4820	01-440-5916	13225E7225	Valve, Ball	2	EA
4930	01-120-7426	13225E9140	Stand Assembly, Distribution Nozzle	2	EA
6545	01-434-9587	13229E7229	Funnel Assembly	2	EA
6545	01-434-9630	$13229^{E}7224$	Adapter, Sink	16	EA

Associated Support Items of Equipment (ASIOE)

NSN					
FSC	**NIIN**	**LIN**	**Description**	**QTY**	**U/M**
5430	01-241-7524	C13825	Container, Cargo	1	EA
8115	01-406-0507	T12938	Tank Assembly, Fabric Collaspible	1	EA

WASTE-WATER AUGMENTATION SET (WWAS), MF2K
2000 CONFIGURATION

NSN					
FSC	NIIN	P/N	Description	QTY	U/M
3990	01-449-1997	13229E7185	Storage and Retrieval Materiel System	4	EA
4320	01-440-4421	13229E7159	Pump Assembly, Centrifugal	1	EA
4610	01-435-4884	WAL-1031-96	Hypochlorination Unit	1	EA
4610	01-440-4086	13229E7162	Pipe Assembly, Potable	1	AY
4610	01-440-4088	13229E7165	Pipe Assembly, Potable	1	AY
4610	01-440-4090	13229E7163	Indicator, Assembly	1	AY
4610	01-440-6834	13229E7168	Nozzle Assembly, Water	1	AY
4710	00-057-7252	MIL-P-236	Pipe , Culvert, Metallic	8	EA
4720	01-140-6288	13225E9136-4	Hose Assembly, Nonmetallic	1	EA
4720	01-175-5958	13225E9136-12	Hose Assembly, Nonmetallic	5	EA
4720	01-177-3714	13225E9136-13	Hose Assembly, Nonmetallic	10	EA
4720	01-434-9594	13229E7223-2	Hose Assembly, Rubber	4	EA
4720	01-434-9605	13229E7223-3	Hose Assembly, Rubber	10	EA
4720	01-434-9627	13229E7226	Hose Assembly, Rubber	5	EA
4720	01-434-9638	13230E5746-4	Hose Assembly, Rubber	1	EA
4720	01-434-9646	13229E7223-1	Hose Assembly, Rubber	8	EA
4720	01-434-9649	13229E7223-4	Hose Assembly, Rubber	2	EA
4720	01-438-7779	13225E9135-9	Hose Assembly, Nonmetallic	1	EA
4720	01-438-8336	13225E9136-17	Hose Assembly, Nonmetallic	1	EA
4720	01-438-8337	13225E9136-15	Hose Assembly, Nonmetallic	2	EA
4720	01-438-8338	13225E9136-14	Hose Assembly, Nonmetallic	5	EA
4720	01-438-8341	13225E9136-10	Hose Assembly, Nonmetallic	2	EA
4720	01-438-8343	13225E9136-9	Hose Assembly, Nonmetallic	3	EA
4720	01-440-4925	13229E7176	Channel, Hose Protector	10	AY
4720	01-440-4928	13229E7175	Channel, Hose Protector	5	EA
4730	00-496-5952	WW-C-633-M	Wye, Quick Disconnect	10	EA
4730	01-064-0560	AA59326XI-1-9	Reducer, Quick Disconnect	1	EA
4730	01-186-0821	AA59326XI-1-10	Reducer, Quick Disconnect	1	EA
4730	01-415-6403	13229E7170	Plug, Quick Disconnect	4	EA
4730	01-415-6420	13229E7195	Adapter, Straight, Hose to Boss	4	EA
4730	01-440-4609	13229E7172	Tee Assembly, Quick Disconnect	2	EA
4730	01-440-4614	354 0910	Nipple, Pipe	4	EA
4730	01-440-4615	13229E7181	Tee Assembly, Quick Disconnect	1	AY
4730	01-440-4633	13229E7182	Tee Assembly, Quick Disconnect	1	AY
4730	01-440-7662	13229E7179	Strainer, Sediment	1	EA
4730	01-440-8569	13229E7173	Coupling Assembly, Quick Disconnect	3	EA
4730	01-487-3575	13229E7174	Tee Assembly, Quick Disconnect	1	EA
4820	01-440-5916	13225E7225	Valve, Ball	1	EA
4820	01-440-5919	13229E7197	Valve, Check	1	AY
4820	01-440-7798	13229E7167	Valve, Gate	4	EA
4820	01-440-8302	13229E7177	Valve, Gate	1	EA
4820	01-440-8306	13229E7178	Valve, Gate	1	EA
4820	01-440-8309	13229E7196	Valve, Gate	1	EA

NSN					
FSC	NIIN	P/N	Description	QTY	U/M
4820	01-440-8765	13229E7169	Valve, Globe	1	EA
4940	01-449-3840	13229E7186-1	Reel Assembly, Hose	2	EA
4940	01-449-3850	13229E7186	Reel Assembly, Hose	15	EA
5985	01-392-9111	AL2423-09-4	Case, Meter and Gauge	1	EA
6545	01-434-9630	13229E7224	Adapter, Sink	4	EA
6545	01-440-7388	13229E7222	Pump Assembly, Reciprocating	1	EA
6630	01-044-0334	U25377	Comparator, Color	1	EA
7240	00-089-3827	MIL-C-43613	Can, Water, Military	1	EA

Associated Support Items of Equipment (ASIOE)

NSN					
FSC	NIIN	LIN	Description	QTY	U/M
5430	01-170-6984	T19033	Tank Assembly, Fabric Collaspible	2	EA
8115	01-241-7524	C13825	Container, Cargo	1	EA

WASTE-WATER AUGMENTATION SET (WWAS), MF2K
2002 CONFIGURATION

NSN					
FSC	NIIN	P/N	Description	QTY	U/M
4320	01-506-4459	13229E7159	Pump Assembly, Centrifugal	1	EA
4610	01-435-4884	WAL-1031-96	Hypochlorination Unit	1	EA
4610	01-440-4086	13229E7162	Pipe Assembly, Potable	1	AY
4610	01-440-4088	13229E7165	Pipe Assembly, Potable	1	AY
4610	01-440-4090	13229E7163	Indicator, Assembly	1	AY
4610	01-440-7388	13229E7222	Pump Assembly, Reciprocating	1	EA
4710	00-057-7252	MIL-P-236	Pipe , Culvert, Metallic	8	EA
4720	01-140-6288	13225E9136-4	Hose Assembly, Nonmetallic	1	EA
4720	01-175-5958	13225E9136-12	Hose Assembly, Nonmetallic	5	EA
4720	01-177-3714	13225E9136-13	Hose Assembly, Nonmetallic	10	EA
4720	01-434-9594	13229E7223-2	Hose Assembly, Rubber	4	EA
4720	01-434-9605	13229E7223-3	Hose Assembly, Rubber	10	EA
4720	01-434-9627	13229E7226	Hose Assembly, Rubber	5	EA
4720	01-434-9638	13230E5746-4	Hose Assembly, Rubber	1	EA
4720	01-434-9646	13229E7223-1	Hose Assembly, Rubber	8	EA
4720	01-434-9649	13229E7223-4	Hose Assembly, Rubber	2	EA
4720	01-438-7779	13225E9135-9	Hose Assembly, Nonmetallic	1	EA
4720	01-438-8336	13225E9136-17	Hose Assembly, Nonmetallic	1	EA
4720	01-438-8337	13225E9136-15	Hose Assembly, Nonmetallic	2	EA
4720	01-438-8338	13225E9136-14	Hose Assembly, Nonmetallic	5	EA
4720	01-438-8341	13225E9136-10	Hose Assembly, Nonmetallic	2	EA
4720	01-438-8343	13225E9136-9	Hose Assembly, Nonmetallic	3	EA
4720	01-440-4928	13229E7175	Channel, Hose Protector	5	EA
4720	01-440-5916	13225E7225	Valve, Ball	1	EA
4730	00-496-5952	WW-C-633-M	Wye, Quick Disconnect	10	EA
4730	01-064-0560	AA59326XI-1-9	Reducer, Quick Disconnect	1	EA
4730	01-186-0821	AA59326XI-1-10	Reducer, Quick Disconnect	1	EA
4730	01-415-6403	13229E7170	Plug, Quick Disconnect	4	EA
4730	01-415-6420	13229E7195	Adapter, Straight, Hose to Boss	4	EA
4730	01-440-4614	354 0910	Nipple, Pipe	4	EA
4730	01-440-4615	13229E7181	Tee Assembly, Quick Disconnect	1	AY
4730	01-440-4633	13229E7182	Tee Assembly, Quick Disconnect	1	AY
4730	01-440-4925	13229E7176	Channel, Hose Protector	10	AY
4730	01-440-7798	13229E7167	Valve, Gate	4	EA
4730	01-440-8765	13229E7169	Valve, Globe	1	EA
4730	01-505-5922		Cage, Wire, Folding	5	EA
4820	01-440-5919	13229E7197	Valve, Check	1	AY
4820	01-440-6834	13229E7168	Nozzle Assembly, Water	1	AY
4820	01-440-8302	13229E7177	Valve, Gate	1	EA
4820	01-440-8306	13229E7178	Valve, Gate	1	EA
4820	01-440-8309	13229E7196	Valve, Gate	1	EA
4820	01-440-8569	13229E7173	Coupling Assembly, Quick Disconnect	3	EA
4820	01-487-3575	13229E7174	Tee Assembly, Quick Disconnect	1	EA

NSN					
FSC	NIIN	P/N	Description	QTY	U/M
5430	01-440-4609	13229E7172	Tee Assembly, Quick Disconnect	2	EA
5985	01-392-9111	AL2423-09-4	Case, Meter and Gauge	1	EA
6545	01-434-9630	13229E7224	Adapter, Sink	4	EA
6545	01-440-7662	13229E7179	Strainer, Sediment	1	EA
6630	01-044-0334	U25377	Comparator, Color	1	EA
7240	00-089-3827	MIL-C-43613	Can, Water, Military	1	EA

Associated Support Items of Equipment (ASIOE)

NSN					
FSC	NIIN	LIN	Description	QTY	U/M
5430	01-170-6984	T19033	Tank Assembly, Fabric Collaspible	2	EA
8115	01-241-7524	C13825	Container, Cargo	1	EA

MAINTENANCE SET (WDWWMSMS)

NSN					
FSC	**NIIN**	**P/N**	**Description**	**QTY**	**U/M**
4010	00-228-9948	RR-C-271	Chain, Weldless	1	BX
4030	00-780-9350	MS87006-13	Hook, Chain	1	HD
4720	00-200-0361	ZZ-H-601	Hose Nonmetalic	100	FT
4720	00-876-8903	J-409	Clamp, Hose	2	EA
4720	01-392-2299	ZZ-H-601	Hose Nonmetalic	50	FT
4730	00-088-4298	AWR14	Seal	5	EA
4730	00-360-0592	MS27021-9	Coupling, Half, Quick Disconnect	4	EA
4730	00-360-0715	A-A-59326/11	Plug, Quick Disconnect	5	EA
4730	00-496-5953	AM-11	Coupling, Half, Quick Disconnect	4	EA
4730	00-823-5316	A-A-59326-11	Plug, Quick Disconnect	4	EA
4730	00-869-5246	MS27028-9	Cap, Quick Disconnect	4	EA
4730	00-909-8627	A-A-52506	Clamp, Hose	100	EA
4730	00-929-0791	MS27028-5	Cap, Quick Disconnect	5	EA
4730	00-948-1722	A-A-59326-6	Coupling, Half, Quick Disconnect	4	EA
4730	01-007-9254	J 405	Clamp, Hose	20	EA
4730	01-164-9254	MS27021-5	Coupling, Half, Quick Disconnect	5	EA
4730	01-222-0943	WW-C-633	Coupling, Half, Quick Disconnect	2	EA
4730	01-223-4931	MS27025-5	Coupling, Half, Quick Disconnect	5	EA
4930	00-253-2478	MIL-G-3859	Lubricating Gun, Hand	1	EA
5110	00-234-6534	A-A-2311	File, Hand	1	EA
5110	00-241-9151	A-A-2312	File, Hand	1	EA
5110	00-263-0349	NN-H-00106	Handle, File	2	EA
5110	00-277-4590	GGG-B-451	Blade, Hand Hacksaw	1	BD
5110	00-289-9657	A-A-453	Frame, Hand Hacksaw	1	EA
5120	00-010-7916	B107.15	Screwdriver, Flat Tip	1	EA
5120	00-061-8545	A-A-1305	Hammer, Hand	1	EA
5120	00-223-7397	B107.23M	Pliers, Slip Joint	1	EA
5120	00-277-1479	GGG-W-651	Wrench, Pipe	2	EA
5140	00-498-8772	CH77	Tool Box, Portable	3	EA
5325	00-926-5411	H01434M	Ring, Retaining	30	EA
5330	00-088-9167	MS27030-3	Gasket	25	EA
5330	00-360-0595	H064330M	Gasket	20	EA
5330	00-612-2414	H7388M	Gasket	4	EA
5330	00-741-7728	MIL-P-11719	Packing, Preformed	20	EA
5330	00-899-4509	H6476M	Gasket	10	EA
5330	01-141-1864	13220E1069-1	Gasket	10	EA
6810	01-358-4336	13229E0923	Sodium, Hypochlorite Technical	6	BG
7510	00-074-5124	A-A-1586	Tape, Pressure Sensitive, Adh	2	RO
8030	00-889-3534	A-A-58092	Tape, Antisiezing	25	EA
9150	01-226-4315	Pacesetter EP-65	Grease, General Purpose	3	TU

APPENDIX D

INVENTORY LISTS

WATER DISTRIBUTION SET, HOSPITAL, MRI 84 BED
WASTE WATER MANAGEMENT SET, HOSPITAL MRI 84 BED
WATER DISTRIBUTION AND WASTEWATER MANAGEMENT SYSTEM MAINTENANCE SET, HOSPITAL, MRI 84 BED
WATER CONNECTION SET

WATER DISTRIBUTION SET, HOSPITAL, MRI 84 BED

NSN					
FSC	**NIIN**	**P/N**	**Description**	**QTY**	**U/M**
3990	01-505-5922	W-2-404-836-SP-SJF	Cage, Wire, Folding	7	EA
4320	01-506-4459	13229E7159	Pump Assembly, Centrifugal	2	EA
4520	01-492-7423	111739	Heater, Water, 9,000 Watts	6	EA
4610	01-435-4884	WAL-1031-96	Hypochlorination Unit	1	EA
4610	01-440-4086	13229E7162	Pipe Assembly, Potable	1	AY
4610	01-440-4088	13229E7165	Pipe Assembly, Potable	1	AY
4610	01-440-4090	13229E7163	Indicator, Assembly	1	AY
4610	01-440-6834	13229E7168	Nozzle Assembly, Water	3	AY
4720	01-175-5958	13225E9136-12	Hose Assembly, Nonmetallic	17	EA
4720	01-177-3714	13225E9136-13	Hose Assembly, Nonmetallic	14	EA
4720	01-438-7779	13225E9135-9	Hose Assembly, Nonmetallic	1	EA
4720	01-438-8335	13225E9136-18	Hose Assembly, Nonmetallic	2	EA
4720	01-438-8336	13225E9136-17	Hose Assembly, Nonmetallic	2	EA
4720	01-438-8337	13225E9136-15	Hose Assembly, Nonmetallic	5	EA
4720	01-438-8338	13225E9136-14	Hose Assembly, Nonmetallic	13	EA
4720	01-438-8341	13225E9136-10	Hose Assembly, Nonmetallic	20	EA
4720	01-438-8343	13225E9136-9	Hose Assembly, Nonmetallic	6	EA
4720	01-440-4925	13229E7176	Channel, Hose Protector	7	AY
4720	01-440-4928	13229E7175	Channel, Hose Protector	2	EA
4730	01-415-6403	13229E7170	Plug, Quick Disconnect	16	EA
4730	01-415-6420	13229E7195	Adapter, Straight, Hose to Boss	16	EA
4730	01-440-4091	13229E0361	Tee Assembly, Quick Disconnect	20	EA
4730	01-440-4609	13229E7172	Tee Assembly, Quick Disconnect	10	EA
4730	01-440-4613	13229E7174	Tee Assembly, Quick Disconnect	6	AY
4730	01-440-4615	13229E7181	Tee Assembly, Quick Disconnect	4	AY
4730	01-440-7662	13229E7179	Strainer, Sediment	1	EA
4730	01-440-8569	13229E7173	Coupling Assembly, Quick Disconnect	13	EA
4730	01-487-3575	13229E7174	Tee Assembly, Quick Disconnect	1	EA
4730	01-499-8687	3629	Reducer, Quick Disconnect	4	EA
4730	01-499-8752	3630	Reducer, Quick Disconnect	4	EA
4820	01-440-5919	13229E7197	Valve, Check	1	AY
4820	01-440-7798	13229E7167	Valve, Gate	21	EA
4820	01-440-8302	13229E7177	Valve, Gate	3	EA
4820	01-440-8306	13229E7178	Valve, Gate	3	EA
4820	01-440-8765	13229E7169	Valve, Globe	1	EA
4930	01-120-7426	13225E9140	Stand Assembly, Distribution Nozzle	3	EA
6545	01-499-5676	02-1038	Case, Medical, Supply and Instrument	1	EA
6630	01-044-0334	U25377	Comparator, Color	1	EA
7240	00-089-3827	MIL-C-43613	Can, Water, Military	1	EA

Associated Support Items of Equipment (ASIOE)

NSN					
FSC	**NIIN**	**P/N**	**Description**	**QTY**	**U/M**
5430	01-506-1999	T15154	Tank Assembly, Fabric Collaspible	1	EA
8115	01-241-7524	C13825	Container, Cargo	1	EA

WASTEWATER MANAGEMENT SET, HOSPITAL MRI 84 BED

NSN					
FSC	**NIIN**	**P/N**	**Description**	**QTY**	**U/M**
3990	01-505-5922	W-2-404-836-SP-SJF	Cage, Wire, Folding	8	EA
4320	01-440-7388	13229E7222	Pump Assembly, Diaphragm	2	EA
4720	01-434-9594	13229E7223-2	Hose Assembly, Rubber	16	EA
4720	01-434-9605	13229E7223-3	Hose Assembly, Rubber	24	EA
4720	01-434-9627	13229E7226	Hose Assembly, Rubber	16	EA
4720	01-434-9638	13230E5746-4	Hose Assembly, Rubber	2	EA
4720	01-434-9646	13229E7223-1	Hose Assembly, Rubber	10	EA
4720	01-434-9649	13229E7223-4	Hose Assembly, Rubber	2	EA
4720	01-440-4925	13229E7176	Channel, Hose Protector	2	AY
4730	00-496-5952	WW-C-633-M	Wye, Quick Disconnect	16	EA
4820	01-440-5916	13225E7225	Valve, Ball	2	EA
4930	01-120-7426	13225E9140	Stand Assembly, Distribution Nozzle	2	EA
6545	01-434-9587	13229E7229	Funnel Assembly	2	EA
6545	01-434-9630	13229E7224	Adapter, Sink	11	EA

Associated Support Items of Equipment (ASIOE)

NSN					
FSC	**NIIN**	**LIN**	**Description**	**QTY**	**U/M**
5430	01-506-1999	T15154	Tank Assembly, Fabric Collaspible	1	EA
8115	01-241-7524	C13825	Container, Cargo	1	EA

WATER DISTRIBUTION AND WASTEWATER MANAGEMENT SYSTEM MAINTENANCE SET, HOSPITAL, MRI 84 BED

NSN					
FSC	**NIIN**	**P/N**	**Description**	**QTY**	**U/M**
4010	00-228-9948	RR-C-271	Chain, Weldless	1	BX
4030	00-780-9350	MS87006-13	Hook, Chain	1	HD
4720	00-200-0361	ZZ-H-601	Hose Nonmetalic	50	FT
4720	00-876-8903	J-409	Clamp, Hose	2	EA
4720	01-392-2299	ZZ-H-601	Hose Nonmetalic	20	FT
4730	00-909-8627	A-A-52506	Clamp, Hose	50	EA
4730	01-007-9254	J 405	Clamp, Hose	20	EA
4930	00-253-2478	MIL-G-3859	Lubricating Gun, Hand	1	EA
5110	00-234-6534	A-A-2311	File, Hand	1	EA
5110	00-241-9151	A-A-2312	File, Hand	1	EA
5110	00-263-0349	NN-H-00106	Handle, File	2	EA
5110	00-277-4590	GGG-B-451	Blade, Hand Hacksaw	1	BD
5110	00-289-9657	A-A-453	Frame, Hand Hacksaw	1	EA
5120	00-010-7916	B107.15	Screwdriver, Flat Tip	1	EA
5120	00-061-8545	A-A-1305	Hammer, Hand	1	EA
5120	00-223-7397	B107.23M	Pliers, Slip Joint	1	EA
5120	00-277-1479	GGG-W-651	Wrench, Pipe	2	EA
5140	00-498-8772	CH77	Tool Box, Portable	3	EA
5325	00-926-5411	H01434M	Ring, Retaining	30	EA
5330	00-088-9167	MS27030-3	Gasket	25	EA
5330	00-360-0595	H064330M	Gasket	20	EA
5330	00-612-2414	H7388M	Gasket	2	EA
5330	00-741-7728	MIL-P-11719	Packing, Preformed	10	EA
6810	01-358-4336	13229E0923	Sodium, Hypochlorite Technical	6	BG
7510	00-074-5124	A-A-1586	Tape, Pressure Sensitive, Adh	2	RO
8030	00-889-3534	A-A-58092	Tape, Antisiezing	25	EA
9150	01-226-4315	Pacesetter EP-65	Grease, General Purpose	3	TU

WATER CONNECTION SET
(Notational)

NSN					
FSC	**NIIN**	**P/N**	**Description**	**QTY**	**U/M**
3990	01-505-5922	W-2-404-836-SP-SJF	Cage, Wire, Folding	3	EA
4720	01-438-8335	13225E9136-18	Hose Assembly, Nonmetallic	10	EA
4730	01-064-0560	AA59326XI-1-9	Reducer, Quick Disconnect	1	EA
4820	01-440-8306	13229E7178	Valve, Gate	1	EA

APPENDIX E

INVENTORY LISTS

WATER DISTRIBUTION SET, HOSPITAL, MRI 164-BED
WASTE WATER MANAGEMENT SET, HOSPITAL MRI 164-BED
WATER DISTRIBUTION AND WASTEWATER MANAGEMENT SYSTEM MAINTENANCE SET, HOSPITAL, MRI 164-BED

Water Distribution Set, Hospital, MRI 164-Bed

NSN					
FSC	NIIN	LIN	Description	QTY	U/M
3990	01-505-5922	W-2-404-836-SP-SJF	Cage, Wire, Folding	13	EA
4320	01-506-4459	13229E7159	Pump Assembly, Centrifugal	3	EA
4520	01-493-7423	111739	Heater, Water, Electric	8	EA
4610	01-435-4884	WAL-1031-96	Hypochlorination Unit	1	EA
4610	01-440-4086	13229E7162	Pipe Assembly, Potable	1	AY
4610	01-440-4088	13229E7165	Pipe Assembly, Potable	1	AY
4610	01-440-4090	13229E7163	Indicator, Assembly	1	AY
4610	01-440-6834	13229E7168	Nozzle Assembly, Water	4	AY
4720	01-140-6288	13225E9136-4	Hose Assembly, Nonmetallic	2	EA
4720	01-175-5958	13225E9136-12	Hose Assembly, Nonmetallic	26	EA
4720	01-177-3714	13225E9136-13	Hose Assembly, Nonmetallic	21	EA
4720	01-438-7779	13225E9135-9	Hose Assembly, Nonmetallic	11	EA
4720	01-438-8335	13225E9136-18	Hose Assembly, Nonmetallic	7	EA
4720	01-438-8336	13225E9136-17	Hose Assembly, Nonmetallic	6	EA
4720	01-438-8337	13225E9136-15	Hose Assembly, Nonmetallic	10	EA
4720	01-438-8338	13225E9136-14	Hose Assembly, Nonmetallic	26	EA
4720	01-438-8341	13225E9136-10	Hose Assembly, Nonmetallic	20	EA
4720	01-438-8343	13225E9136-9	Hose Assembly, Nonmetallic	18	EA
4720	01-440-4925	13229E7176	Channel, Hose Protector	8	AY
4730	01-064-0560	AA59326XI-1-9	Reducer, Quick Disconnect	1	EA
4730	01-186-0821	AA59326XI-1-10	Reducer, Quick Disconnect	1	EA
4730	01-415-6403	13229E7170	Plug, Quick Disconnect	17	EA
4730	01-415-6420	13229E7195	Adapter, Straight, Hose to Boss	17	EA
4730	01-440-4091	13229E0361	Tee Assembly, Quick Disconnect	12	EA
4730	01-440-4609	13229E7172	Tee Assembly, Quick Disconnect	17	AY
4730	01-440-4613	13229E7174	Tee Assembly, Quick Disconnect	12	AY
4730	01-440-4633	13229E7182	Tee Assembly, Quick Disconnect	1	AY
4730	01-440-4931	13230E5716	Tee Assembly, Quick Disconnect	1	AY
4730	01-440-7662	13229E7179	Strainer, Sediment	1	EA
4730	01-440-8569	13229E7173	Coupling Assembly, Quick Disconnect	11	EA
4730	01-445-5188	13229E7190	Adapter Assembly, Quick Disconnect	1	EA
4730	01-487-3575		Tee Assembly, Quick Disconnect	1	AY
4730	01-499-8687	3629	Reducer, Quick Disconnect	2	EA
4730	01-499-8752	3630	Reducer, Quick Disconnect	2	EA
4820	01-440-5919	13229E7197	Valve, Check	1	AY
4820	01-440-7798	13229E7167	Valve, Gate	31	EA
4820	01-440-8302	13229E7177	Valve, Gate	2	EA
4820	01-440-8306	13229E7178	Valve, Gate	1	EA
4820	01-440-8765	13229E7169	Valve, Globe	3	EA
4930	01-120-7426	13225E9140	Stand Assembly, Distribution Nozzle	4	EA
6545	01-499-5676	02-1038	Case, Medical Instrument and Supply	1	EA
6630	01-044-0334	U25377	Comparator, Color	1	EA
7240	00-089-3827	MIL-C-43613	Can, Water, Military	1	EA

Associated Support Items of Equipment (ASIOE)

NSN					
FSC	**NIIN**	**LIN**	**Description**	**QTY**	**U/M**
5430	01-406-0507	T12938	Tank Assembly, Fabric Collaspible	1	EA
8115	01-241-7524	C13825	Container, Cargo	1	EA

Wastewater Management Set, Hospital, MRI 164-Bed

NSN					
FSC	NIIN	LIN	Description	QTY	U/M
3990	01-505-5922	W-2-404-836-SP-SJF	Cage, Wire, Folding	8	EA
4320	01-440-7388	13229E7222	Pump Assembly, Diaphram	4	EA
4720	01-140-6288	13225E9136-4	Hose Assembly, Nonmetallic	2	EA
4720	01-434-9594	13229E7223-2	Hose Assembly, Rubber	32	EA
4720	01-434-9605	13229E7223-3	Hose Assembly, Rubber	48	EA
4720	01-434-9627	13229E7226	Hose Assembly, Rubber	18	EA
4720	01-434-9638	13230E5746-4	Hose Assembly, Rubber	4	EA
4720	01-434-9646	13229E7223-1	Hose Assembly, Rubber	21	EA
4720	01-434-9649	13229E7223-4	Hose Assembly, Rubber	15	EA
4720	01-440-4925	13229E7176	Channel, Hose Protector	5	AY
4730	00-496-5952	WW-C-633-M	Wye, Quick Disconnect	32	EA
4730	01-064-0560	AA59326XI-1-9	Reducer, Quick Disconnect	1	EA
4730	01-186-0821	AA59326XI-1-10	Reducer, Quick Disconnect	1	EA
4820	01-440-5916	13225E7225	Valve, Ball	4	EA
4930	01-120-7426	13225E9140	Stand Assembly, Distribution Nozzle	2	EA
6545	01-434-9587	13229E7229	Funnel Assembly	2	EA
6645	01-434-9630	13229E7224	Adapter, Sink	7	EA

Associated Support Items of Equipment (ASIOE)

NSN					
FSC	NIIN	LIN	Description	QTY	U/M
5430	01-406-0507	T12938	Tank Assembly, Fabric Collaspible	1	EA
8115	01-241-7524	C13825	Container, Cargo	1	EA

Water Distribution and Wastewater Management, Maintenance Set, MRI-164

NSN					
FSC	**NIIN**	**P/N**	**Description**	**QTY**	**U/M**
4010	00-228-9948	RR-C-271	Chain, Weldless	1	BX
4030	00-780-9350	MS87006-13	Hook, Chain	1	HD
4720	00-200-0361	ZZ-H-601	Hose Nonmetalic	100	FT
4720	00-876-8903	J-409	Clamp, Hose	2	EA
4720	01-392-2299	ZZ-H-601	Hose Nonmetalic	50	FT
4730	00-088-4298	AWR14	Seal	1	EA
4730	00-360-0592	MS27021-9	Coupling, Half, Quick Disconnect	3	EA
4730	00-360-0715	A-A-59326/11	Plug, Quick Disconnect	3	EA
4730	00-496-5953	AM-11	Coupling, Half, Quick Disconnect	3	EA
4730	00-823-5316	A-A-59326-11	Plug, Quick Disconnect	3	EA
4730	00-869-5246	MS27028-9	Cap, Quick Disconnect	3	EA
4730	00-909-8627	A-A-52506	Clamp, Hose	10	EA
4730	00-929-0791	MS27028-5	Cap, Quick Disconnect	3	EA
4730	00-948-1722	A-A-59326-6	Coupling, Half, Quick Disconnect	3	EA
4730	01-007-9254	J 405	Clamp, Hose	10	EA
4730	01-164-9254	MS27021-5	Coupling, Half, Quick Disconnect	3	EA
4730	01-222-0943	WW-C-633	Coupling, Half, Quick Disconnect	3	EA
4730	01-223-4931	MS27025-5	Coupling, Half, Quick Disconnect	3	EA
4930	00-253-2478	MIL-G-3859	Lubricating Gun, Hand	1	EA
5110	00-234-6534	A-A-2311	File, Hand	1	EA
5110	00-241-9151	A-A-2312	File, Hand	1	EA
5110	00-263-0349	NN-H-00106	Handle, File	2	EA
5110	00-277-4590	GGG-B-451	Blade, Hand Hacksaw	1	BD
5110	00-289-9657	A-A-453	Frame, Hand Hacksaw	1	EA
5120	00-010-7916	B107.15	Screwdriver, Flat Tip	1	EA
5120	00-061-8545	A-A-1305	Hammer, Hand	1	EA
5120	00-223-7397	B107.23M	Pliers, Slip Joint	1	EA
5120	00-277-1479	GGG-W-651	Wrench, Pipe	2	EA
5140	00-498-8772	CH77	Tool Box, Portable	3	EA
5325	00-926-5411	H01434M	Ring, Retaining	30	EA
5330	00-088-9167	MS27030-3	Gasket	15	EA
5330	00-360-0595	H064330M	Gasket	10	EA
5330	00-612-2414	H7388M	Gasket	4	EA
5330	00-741-7728	MIL-P-11719	Packing, Preformed	10	EA
5330	00-899-4509	H6476M	Gasket	2	EA
5330	01-141-1864	13220E1069-1	Gasket	2	EA
6810	01-358-4336	13229E0923	Sodium, Hypochlorite Technical	6	BG
7510	00-074-5124	A-A-1586	Tape, Pressure Sensitive, Adh	2	RO
8030	00-889-3534	A-A-58092	Tape, Antisiezing	15	EA
9150	01-226-4315	Pacesetter EP-65	Grease, General Purpose	3	TU

Water Distribution Connection Set

NSN					
FSC	NIIN	P/N	Description	QTY	U/M
3990	01-505-5922	W-2-404-836-SP-SJF	Cage, Wire, Folding	3	EA
4720	01-438-8335	13225E9136-18	Hose Assembly, Nonmetallic	10	EA
4730	01-064-0560	AA59326XI-1-9	Reducer, Quick Disconnect	1	EA
4820	01-440-8306	13229E7178	Valve, Gate	1	EA

APPENDIX F
ORGANIZATIONAL MAINTENANCE
REPAIR PARTS AND COMPONENTS
WATER DISTRIBUTION SET

SECTION 1. INTRODUCTION

F-1. Scope. This RPSTL lists and authorizes spares and repair parts; special tools; special test, measurement, and diagnostic equipment (TMDE); and other special support equipment required for the performance of organizational maintenance of the Water Distribution Set, Hospital, DEPMEDS.

F-2. General. In addition to Section 1, Introduction, this Repair Parts and Special Tools List is divided into the following sections:

a. Section 2 – Repair Parts List. A list of spares and repair parts authorized by this RPSTL for use in the performance of maintenance. The list also includes parts which must be removed for replacement of the authorized parts. Parts lists are composed of parts, with the components of each part listed in ascending figure and item number sequence. Bulk materials are listed by item name in FIG BULK at the end of the section.

b. Section 3 – Special Tools List. Not applicable.

c. Section 4 – Cross reference Indexes. Not applicable.

F-3. Explanation of Columns (Section 2).

a. FIG NO. (Column 1a). This column lists the number of the figure where the item is identified/located.

b. ITEM NO. (Column 1b). Indicates the number used to identify items called out in the illustration.

c. SMR Code.(Column 2).

(1) *Source Code* (2 positions). Codes are entered in the first and second positions of the SMR indicating the source for replacement purposes, i.e., procured and stocked, manufactured or assembled.

Code	Explanation
PA	Item procured and stocked for anticipated or known usage. Items are normally considered for replenishment.
PB	Item procured and stocked for insurance purposes because essentiality dictates that a quantity be available in the supply system.
PC	Item procured and stocked but is deteriorative in nature.
PD	Support item, excluding support equipment, procured for initial issue and stocked only for subsequent or additional initial issues. Not subject to automatic replenishment.
PE	End item and/or support equipment procured and stocked for initial issue for specific maintenance activities

PF	Support equipment which will not be stocked but which will be centrally procured on demand.
PG	Item procured and stocked to provide for sustained support for the life of the equipment. It is applied to an item that, because of probable discontinuance or shutdown of production facilities would prove uneconomical to reproduce at a later time.
PH	Item procured and stocked and has been identified to contain hazardous materiel, item requires recordation in the Hazardous Materiel Information System (HMIS) and a Materiel Safety Data Sheet (MSDS).
PR	End item and/or support item, terminal or obsolete and replaced. No longer authorized for procurement. On hand assets may be issued until exhausted. Then use replacement item.
PZ	Item terminal or obsolete with no replacement, discontinue use.
KD	An item contained in a depot overhaul/repair kit and not purchased separately. Depot kit defined as a kit that provided items required at the time of depot overhaul or repair.
KF	An item contained in a maintenance kit and not purchased separately. Maintenance kit defined as a kit that provides an item that can be replaced at organizational or intermediate levels of maintenance.
KB	Item included in both a depot overhaul/repair kit and a maintenance kit.
MO	Item to be manufactured or fabricated at organizational level.
MF	Item to be manufactured or fabricated at DS level.
MH	Item to be manufactured or fabricated at GS level.
MD	Item to be manufactured or fabricated at depot level.
AO	Item to be assembled at organizational level.
AF	Item to be assembled at DS level.
AH	Item to be assembled at GS level.
AD	Item to be assembled at depot level.
XA	Item is not procured or stocked because the requirements for the item will result in the replacement of the next higher assembly.
XB	Support item with low mortality rate, not procured or stocked.
XC	Installation drawing, diagram, instruction sheet, field service drawing, that is identified by manufacturer's part number.
XD	Support item with low mortality rate, not stocked. Local purchase or requisition through normal supply channels.

(2) *Maintenance Code* (2 positions).

(a) General. Maintenance codes are assigned to indicate the levels of maintenance authorized to USE, REMOVE, REPLACE, or REPAIR support items. The maintenance codes are entered in the third and fourth positions are as follows:

(b) USE (third position). This position will indicate the lowest maintenance level authorized to remove, replace and use the support item.

Code	**Explanation**
O	Support item is removed, replaced, used at the organizational level of maintenance.
F	Support item is removed, replaced, used at the DS level.
Code	**Explanation**
H	Support item is removed, replaced, used at the GS level.
K	Repairable item. Item is removed, replaced or used at contractor facility.
D	Item is removed, replaced or used at Depot level only.

(b) REPAIR (fourth position). This position will indicate whether the item is to be repaired and identifies the lowest maintenance level with the capabilities to perform complete repair. This code will only be used if the first position of the SMR code is "P". When a maintenance code is not used a date "-" sign will be entered.

Code	Explanation
O	Maintenance at the organizational level of maintenance.
F	Maintenance at the DS level.
H	Maintenance at the GS level.
K	Repairable item. Item is repaired at contractor facility.
D	Repair at Depot level only.

(3) *Recoverability Code* (1 position). Code entered in the fifth position indicates the desired disposition of the support item.

Code	Explanation
Z	Non-repairable item. When item becomes unserviceable, condemn and dispose of at authorized level.
O	Repairable item. When uneconomically repairable, condemn and dispose at organization level.
F	Repairable item. When uneconomically repairable, condemn and dispose at DS level.
H	Repairable item. When uneconomically repairable, condemn and dispose at GS level.
K	Repairable item. Condemnation and dispose at Contractor facility.
D	Repairable item. When beyond lower level repair capability, return to depot. Condemnation and disposal not authorized below depot level.
L	Repairable item. Condemnation and disposal not authorized below depot level.

d. NSN (Column 3). The National Stock Number which is used to identify the item.

e. PART NUMBER (Column 4). Indicates the primary number used by the manufacturer (individual, company, firm, corporation, or Government activity) that controls the design, specifications, standards, and inspection requirements to identify an item or range of items.

f. DESCRIPTION (Column 5). This column contains the following information:

(1) The Federal Item name and, when required, a minimum description to identify the item.

(2) Spare/repair parts that make up an assembled item are listed immediately following the assembled item line entry.

(3) Part numbers for bulk materials are references in this column in the line item entry for the item to be manufactured/fabricated.

(4) The usable on code. Not applicable.

g. QTY (Column 6). The QTY (quantity per figure column) indicates the quantity of the item used in the illustration figure. A "V" appearing in this column in lieu of a quantity indicates that the quantity is variable and quantity may vary from application to application.

h. UI (Column 7). The UI (Unit of Issue) indicates the unit of issue of the item used in the illustrated figure. A "AR" appearing in this column in lieu of a unit of issue indicates that the unit is as required and may vary from application to application.

i. SOS (Column 8). The SOS (Source of Supply) indicates the source from which the part may be ordered.

F-4. Explanation of Columns (Section 4). Not applicable.

F-5. Special Information. Not applicable.

F-6. How to Locate Repair Parts.

a. When NSN or Part Number is Not Known.

(1) First. Using the table of contents, determine the assembly group or subassembly group to which the item belongs. This is necessary since figures are prepared for assembly groups and subassembly groups, and listings are divided into the same groups.

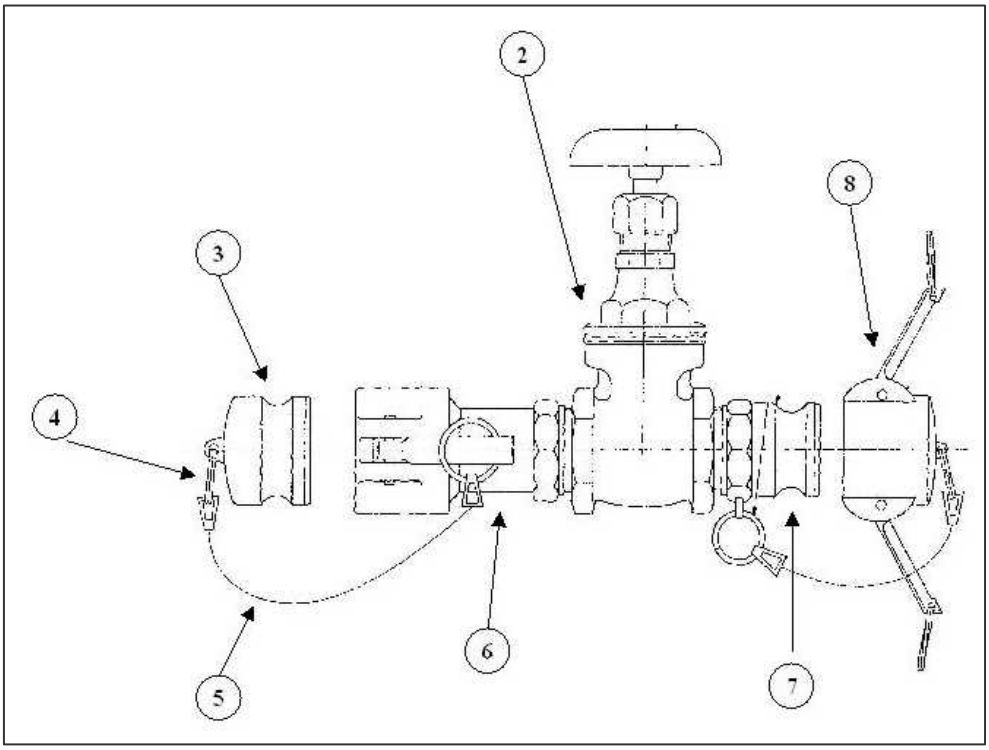
(2) Second. Find the figure covering the assembly group of subassembly group to which the item belongs.

(3) Third. Identify the item on the figure and use the corresponding table to find the NSN or Part Number.

b. When NSN or Part Number is Known. Not applicable.

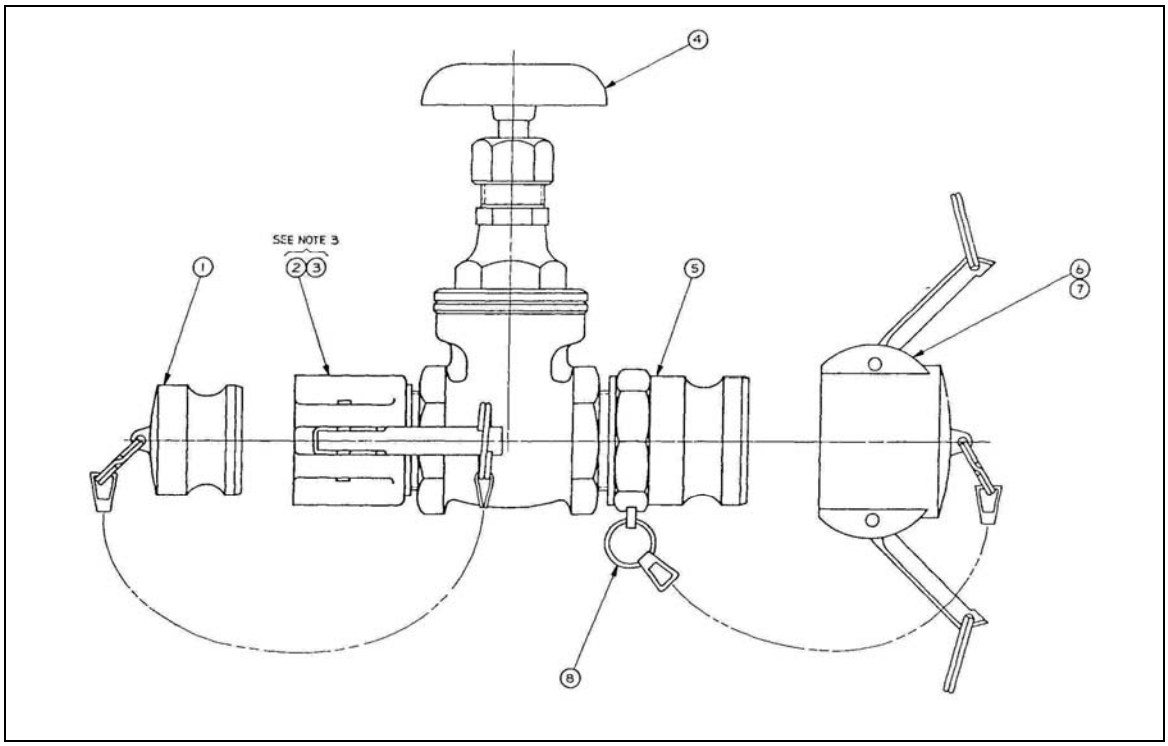
F-7. Abbreviations. Not applicable.

SECTION 2 – REPAIR PARTS LISTS
Valve, Gate, 2-inch female, 1½-inch male
Figure F-1



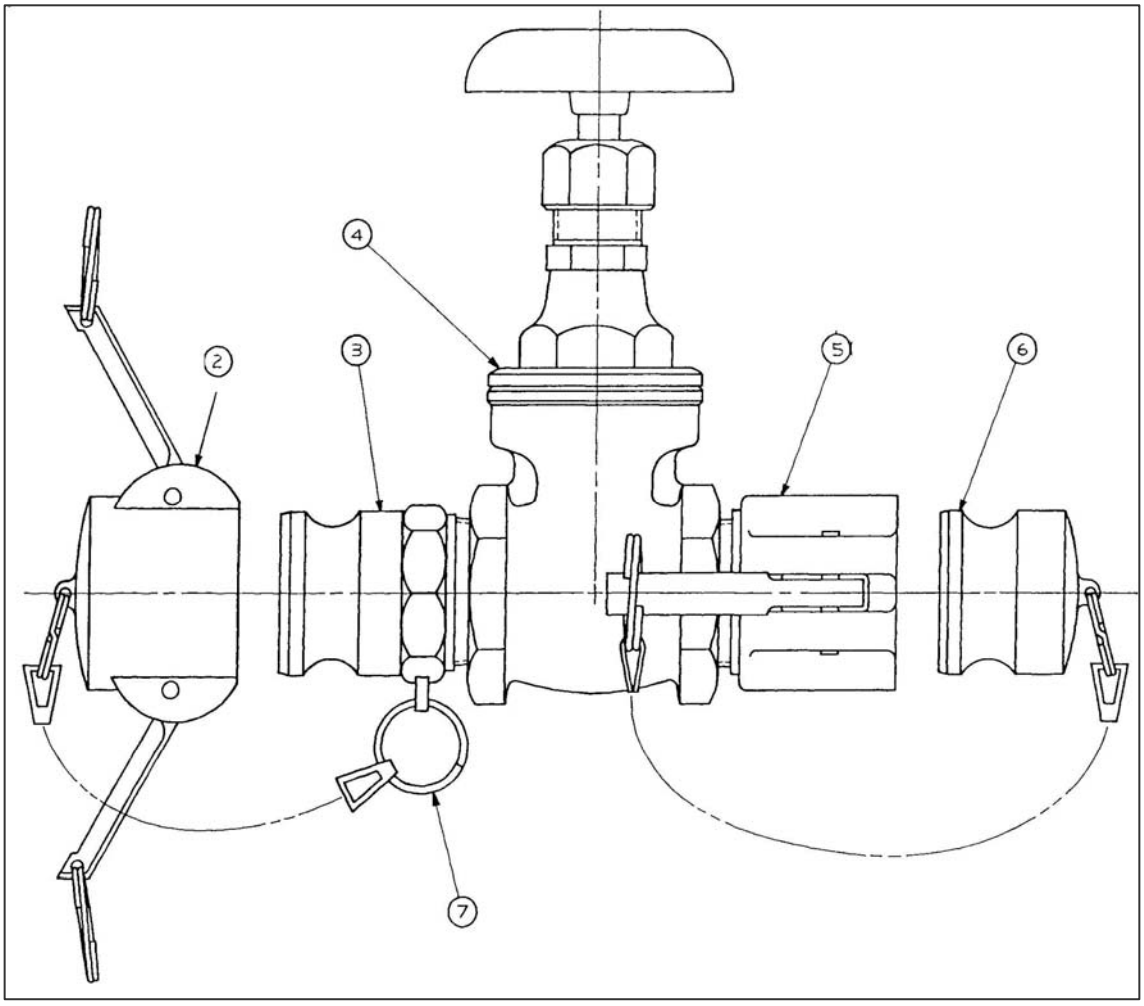
(1)								
(a) FIG NO.	(b) ITEM NO.	(2) SMR	(3) NSN	(4) PART NO.	(5) DESCRIPTION	(6) QTY	(7) UI	(8) SOS
1	1	PDOOO	4820-01-440-8306	13229E7178	Valve, Gate 2"F x 1 1/2"M	1	EA	S9C
1	2	XA--Z	4820-01-358-2557	MSS-SP-80	Valve, Gate	1	EA	S9C
1	3	PDO-Z	4730-00-915-5127	MS27029-11	Plug, Quick Disconnect 2"	1	EA	S9C
1	4	PAO-Z	5325-00-926-5411	H01434M	Retaining Ring	6	EA	S9I
1	5	PAO-Z	4010-00-228-9948	RR-C-271	Chain, Weldless	V	BX	S9G
1	6	PDOOO	4730-01-192-1624	MS49002-9	Coupling Half, Quick Disconnect F 2"	1	EA	S9C
1	7	PDOOO	4730-00-360-0589	MS27002-9	Coupling Half, Quick Disconnect M 1 1/2"	1	EA	S9C
1	8	PDOOO	4730-00-869-5246	MS27028-9	Cap Quick Disconnect 1 1/2"	1	EA	S9C
1		PAO-Z	8030-00-889-3534	A-A-58092	Tape Antisiezing	V	EA	GSA

SECTION 2 – REPAIR PARTS LISTS
Valve, Gate, 1½-inch female, 2-inch male
Figure F-2



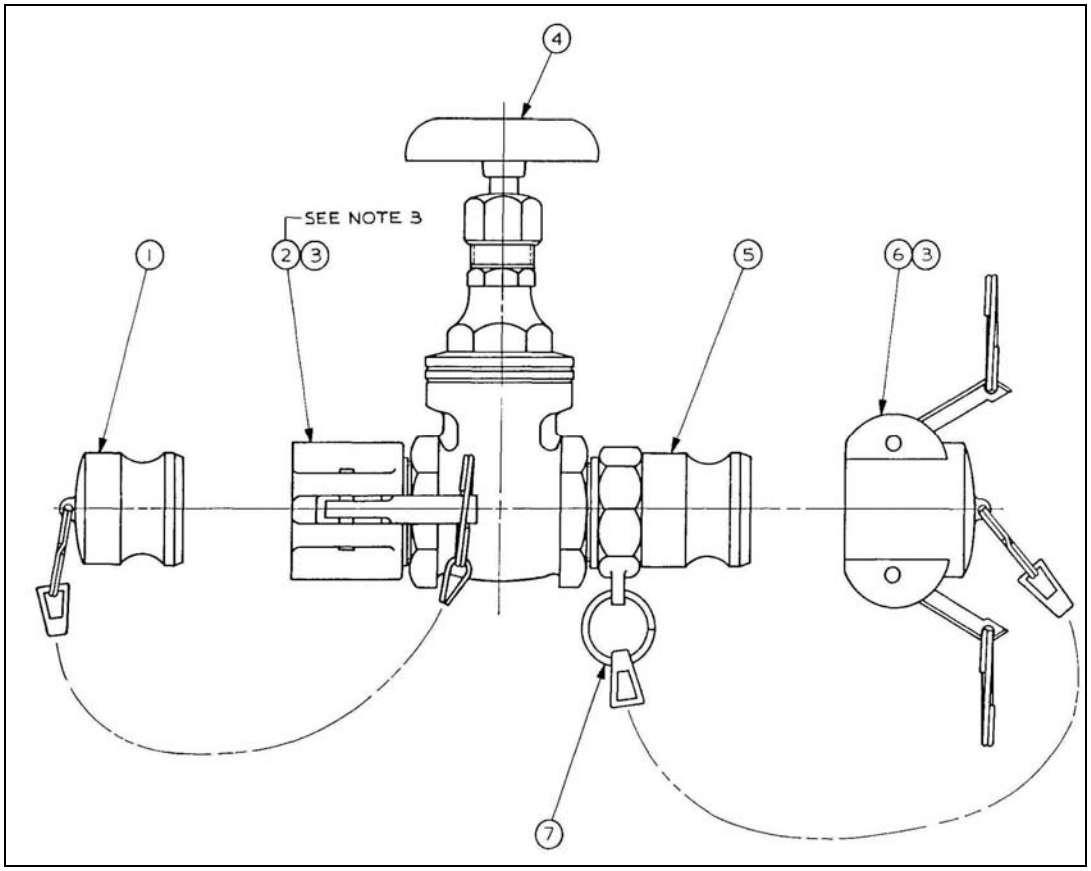
(1)								
(a) FIG NO.	(b) ITEM NO.	(2) SMR	(3) NSN	(4) PART NO.	(5) DESCRIPTION	(6) QTY	(7) UI	(8) SOS
2		PDOOO	4820-01-440-8302	13229E7177	Valve, Gate 1 1/2"F x 2"M	1	EA	S9C
2	1	PDOOO	4730-00-869-5246	MS27028-9	Cap, Quick Disconnect	1	EA	S9C
2	2	PDOOO	4730-00-980-9411	MS27024-2	Coupling Half Quick Disconnect 1 1/2"F NPT	1	EA	S9C
2	3	PAO-Z	5530-00-360-0595	MS27030-5	Gasket	1	EA	S9I
2	4	XA-Z	4820-01-358-2557	MSS-SP-80	Valve, Gate	1	EA	S9C
2	5	PDOOO	4730-00-432-7448	MS49001-9	Coupling Half Quick Disconnect 2"M w/1 1/2M" NPT	1	EA	S9C
2	6	PDOOO	4730-00-649-9100	MS27028-11	Cap, Quick Disconnect 2"	1	EA	S9C
2	7	PAO-Z	5330-00-612-2414	MS27030-6	Gasket	1	EA	S9I
2	8	PAO-Z	5325-00-926-5411	H01434M	Ring, Retaining	5	EA	S9G
2		PAO-Z	8030-00-889-3534	A-A-58092	Tape, Antisiezing	V	AR	GSA

SECTION 2 – REPAIR PARTS LISTS
Valve, Globe, 1½-inch female, 1½-inch male
Figure F-3



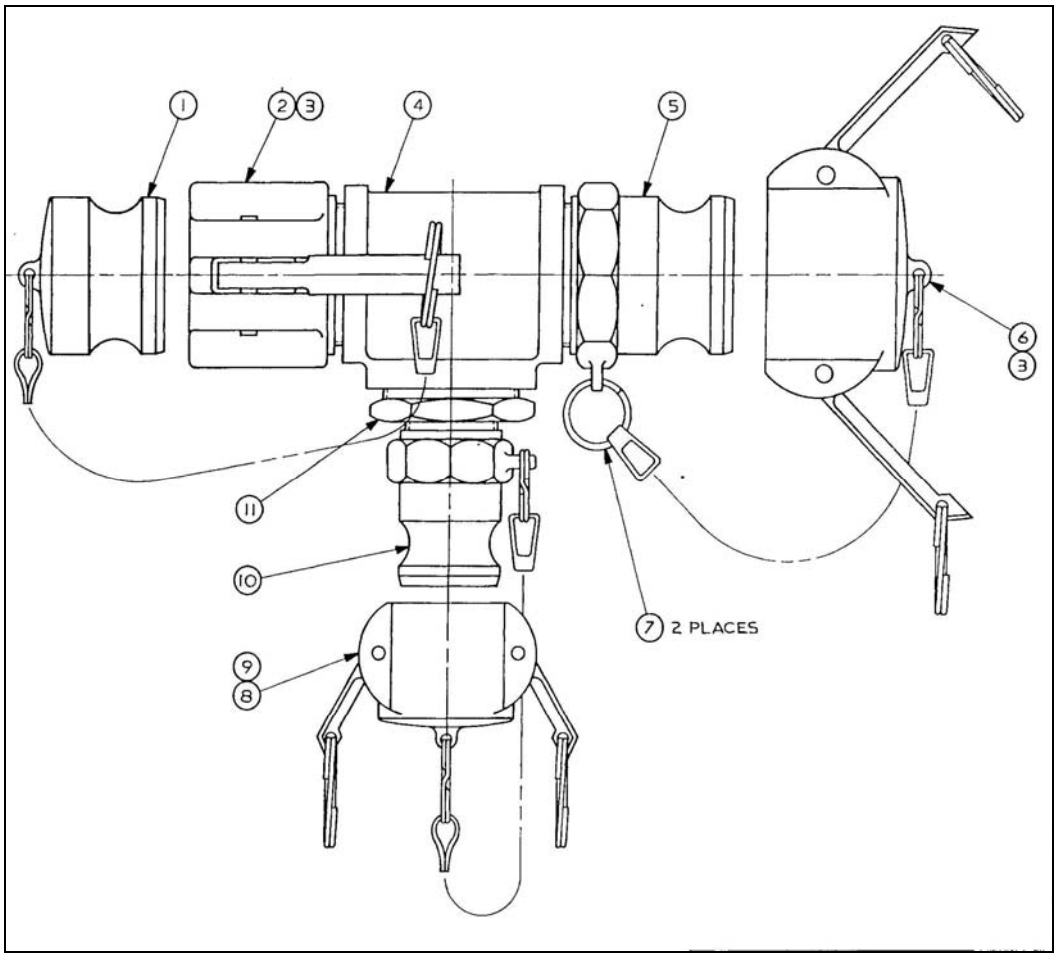
(1)								
(a) FIG NO.	(b) ITEM NO.	(2) SMR	(3) NSN	(4) PART NO.	(5) DESCRIPTION	(6) QTY	(7) UI	(8) SOS
3	1	PDOOO	4820-01-440-8765	13229E7169	Valve, Globe Assembly 1 1/2"F x 1 1/2"M	1	EA	S9C
3	2	PDOOO	4730-00-869-5246	MS27028-9	Cap Quick Disconnect 1 1/2"	1	EA	S9C
3	3	PDOOO	4730-00-360-0592	MS27021-9	Coupling Half Quick Disconnect 1 1/2" M	1	EA	S9C
3	4	XA-Z	4820-00-262-6877	MSS-SP-80	Valve, Globe	1	EA	S9C
3	5	PDOOO	4730-00-980-9411	MS27024-9	Coupling Half Quick Disconnect 1 1/2" F	1	EA	S9C
3	6	PDO-Z	4730-00-823-5316	MS27029-9	Plug, Quick Disconnect 1 1/2"	1	EA	S9C
3	7	PAO-Z	5325-00-926-5411	H01434M	Ring Retaining	6	EA	S9I
3		PAO-Z	8030-00-889-3534	A-A-58092	Tape Antiseizing	V	AR	GSA

SECTION 2 – REPAIR PARTS LISTS
Valve, Gate, 1-Inch Female x 1-Inch Male
Figure F-4



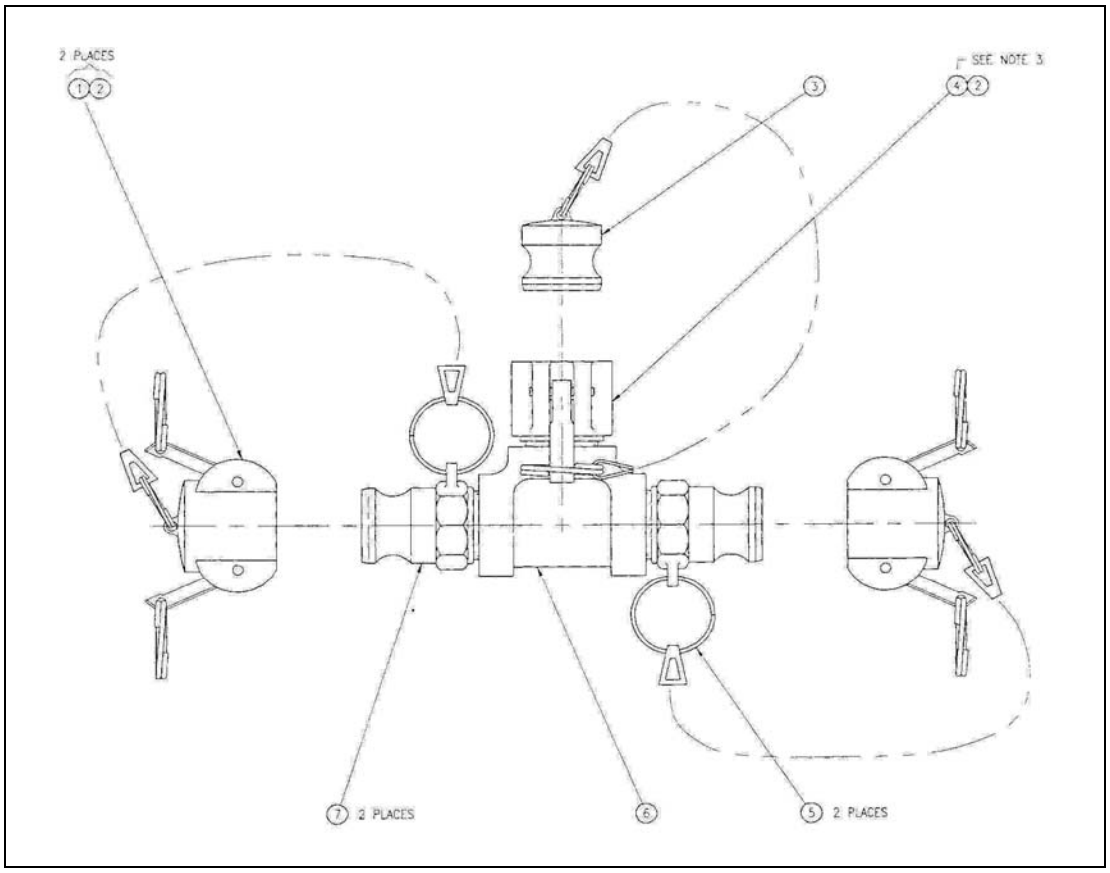
(1)								
(a) FIG NO.	(b) ITEM NO.	(2) SMR	(3) NSN	(4) PART NO.	(5) DESCRIPTION	(6) QTY	(7) UI	(8) SOS
4		PDOOO	4820-01-440-7798	13229E7167	Valve, Gate Assembly 1"F x 1"M	1	EA	S9C
4	1	PDO-Z	4730-00-360-0715	MS27029-5	Plug, Quick Disconnect 1"	1	EA	S9C
4	2	PDOOO	4730-00-360-0710	MS27024-5	Coupling Half Quick Disconnect 1"F w/M NPT	1	EA	S9C
4	3	PAO-Z	5330-00-088-9167	MS27030-4	Gasket	2	EA	S9I
4	4	XA-Z	4820-00-554-8715	WWV54	Valve, Gate	1	EA	S9C
4	5	PDOOO	4730-00-084-7435	MS27022-5	Coupling Half Quick Disconnect 1"M w/M NPT	1	EA	S9C
4	6	PDOOO	4730-00-360-0791	MS27028-5	Cap, Quick Disconnect 1"	1	EA	S9C
4	7	PAO-Z	5325-00-926-5411	H01434M	Ring, Retaining	6	EA	S9I
4		PAO-Z	8030-00-889-3534	A-A-58092	Tape, Antisiezing	V	AR	GSA

SECTION 2 – REPAIR PARTS LISTS
Tee Assembly, Quick Disconnect
1½-Inch Female x 1½-Inch Male x 1-Inch Male
Figure F-5



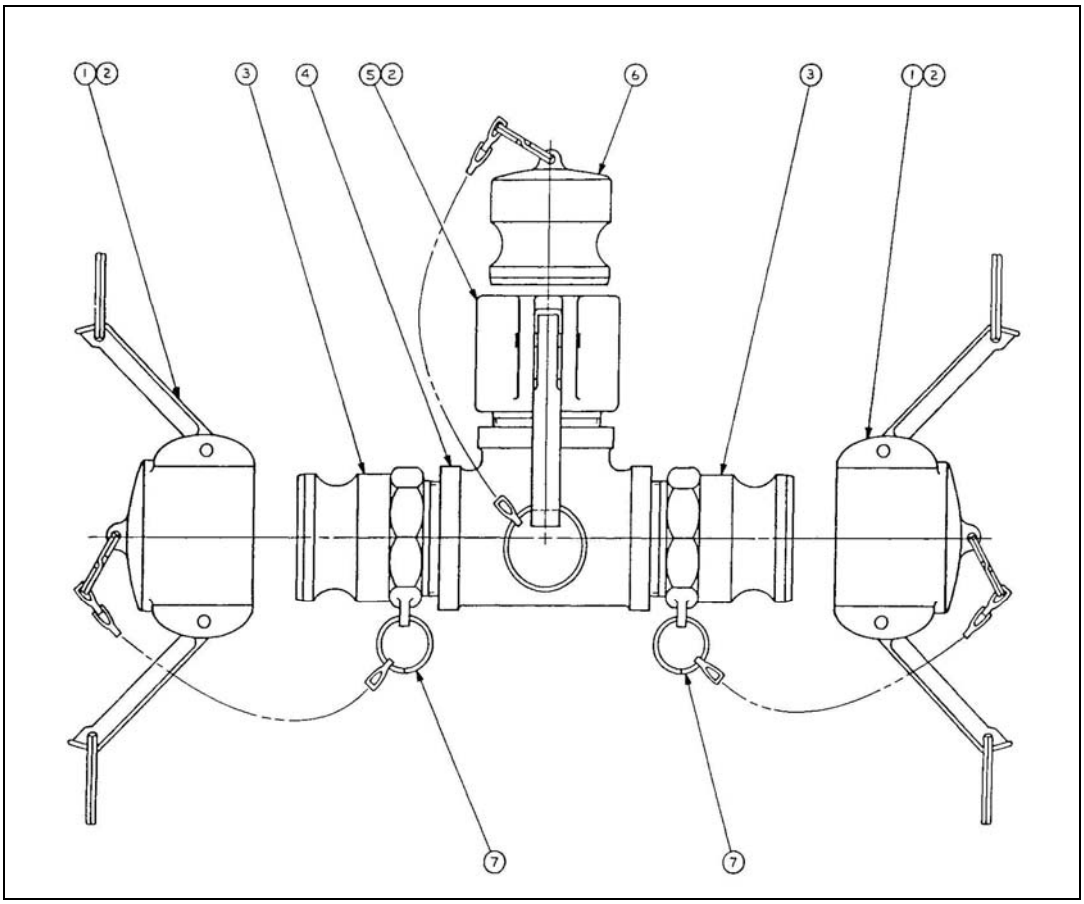
(1)								
(a) FIG NO.	(b) ITEM NO.	(2) SMR	(3) NSN	(4) PART NO.	(5) DESCRIPTION	(6) QTY	(7) UI	(7) SOS
5		PDOOO	4730-01-440-4609	13229E7172	Tee Assembly Quick Disconnect 1 1/2"F x 1 1/2"M x 1" M	1	AY	S9C
5	1	PDO-Z	4730-00-823-5316	MS217029-9	Plug, Quick Disconnect, 1 1/2"	1	EA	S9C
5	2	PDOOO	4730-00-980-9411	MS27024-9	Coupling Half Quick Disconnect 1 1/2"F NPT	1	EA	S9C
5	3	PAO-Z	5330-00-360-0595	MS27030-5	Gasket	2	EA	S9I
5	4	XA-Z	4730-01-439-9316	13229E7191-25	Tee, Pipe	1	EA	S9C
5	5	PDOOO	4730-00-360-0589	MS27022-9	Coupling Half Quick Disconnect 1 1/2"M NPT	1	EA	S9C
5	6	PDOOO	4730-00-869-5246	MS27028-9	Cap, Quick Disconnect, 1 1/2"	1	EA	S9C
5	7	PAO-Z	5325-00-926-5411	H01434M	Ring, Retaining	9	EA	S9I
5	8	PDOOO	4730-00-929-0791	MS27028-5	Cap, Quick Disconnect, 1"	1	EA	S9C
5	9	PAO-Z	5330-00-088-9167	MS27030-3	Gasket	1	EA	S9I
5	10	PDOOO	4730-00-084-7435	MS27022-5	Coupling Half Quick Disconnect 1 "M NPT	1	EA	S9C
5	11	PAO-Z	4730-01-440-0076	13229E7191-23	Bushing, Pipe 1 1/2" x 1"	1	EA	S9C
5		PAO-Z	8030-00-889-3534	A-A-58092	Tape, Antiseizing	V	AR	GSA

SECTION 2 – REPAIR PARTS LISTS
Tee Assembly, Quick Disconnect
1-Inch Female x 1-Inch Male x 1-Inch Male
Figure F-6



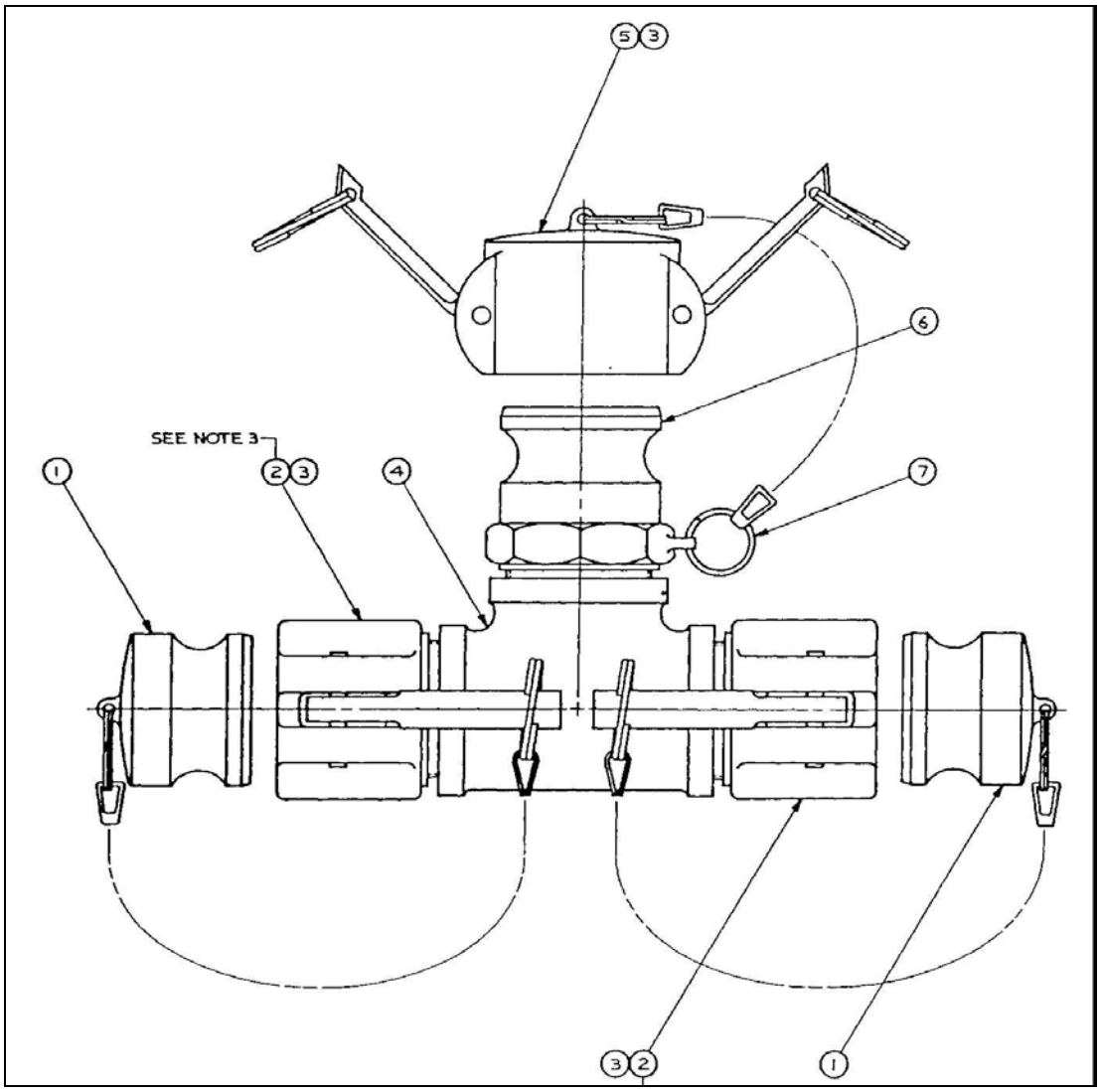
(1)								
(a) FIG NO.	(b) ITEM NO.	(2) SMR	(3) NSN	(4) PART NO.	(5) DESCRIPTION	(6) QTY	(7) UI	(8) SOS
6		PDOOO	4730-01-440-4091	13229E0361	Tee Assembly Quick Disconnect 1"F x 1"M x 1"M	1	EA	S9C
6	1	PDOOO	4730-00-360-0791	MS27028-5	Cap, Quick Disconnect 1"	2	EA	S9C
6	2	PAO-Z	5330-00-088-9167	MS27030-4	Gasket	2	EA	S9I
6	3	PDO-Z	4730-00-360-0715	MS27029-5	Plug, Quick Disconnect 1"	1	EA	S9C
6	4	PDOOO	4730-00-360-0710	MS27026-5	Coupling Half Quick Disconnect 1"F w/M NPT	1	EA	S9C
6	5	PAO-Z	5325-00-926-5411	H01434M	Ring, Retaining	11	EA	S9I
6	6			M52618/1 B06XC	Tee, Pipe Straight 1"	1	EA	S9C
6	7	PDOOO	4730-00-084-7435	MS27022-5	Coupling Half Quick Disconnect 1"F w/M NPT	2	EA	S9C
6		PAO-Z	8030-00-889-3534	A-A-58092	Tape, Antisiezing	V	AR	GSA

SECTION 2 – REPAIR PARTS LISTS
Tee Assembly, Quick Disconnect
1½-Inch Male x 1½-Inch Male x 1½-Inch Female
Figure F-7



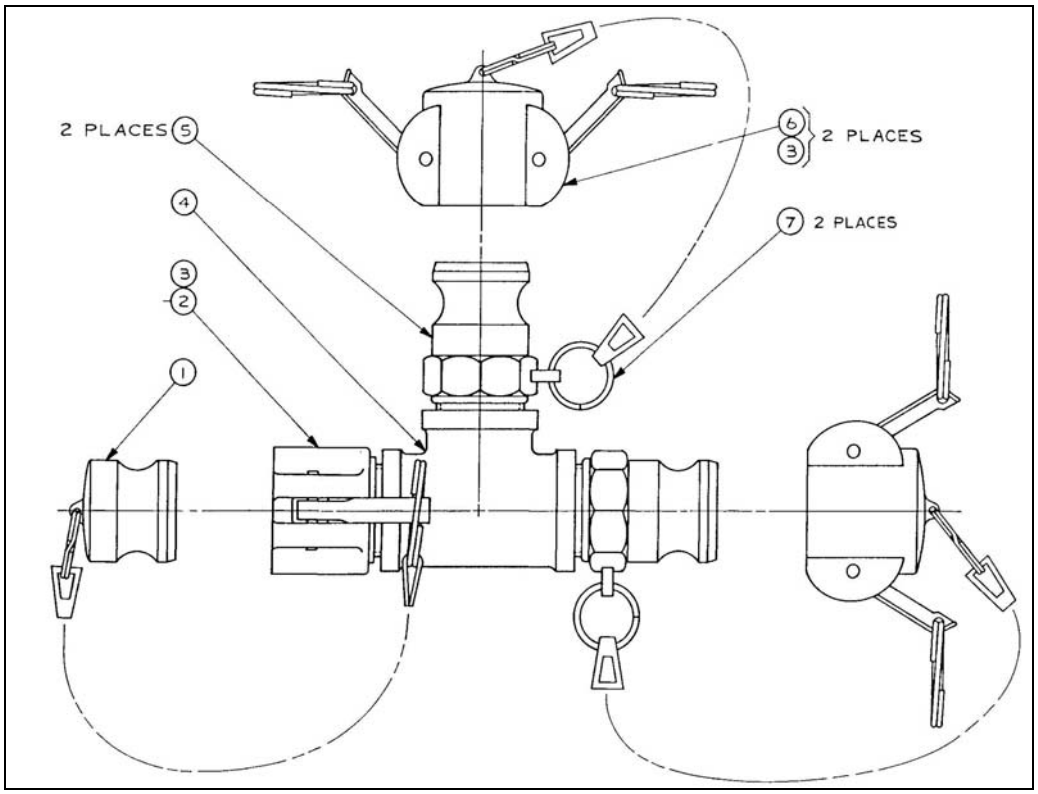
(1)								
(a) FIG NO.	(b) ITEM NO.	(2) SMR	(3) NSN	(4) PART NO.	(5) DESCRIPTION	(6) QTY	(7) UI	(8) SOS
7		PDOOO	4730-01-440-4633	13229E7182	Tee Assembly Quick Disconnect 1 1/2"M x 1 1/2"M x 1 1/2"F	1	EA	S9C
7	1	PDOOO	4730-00-869-5246	MS27028-9	Cap, Quick Disconnect 1 1/2"	2	EA	S9C
7	2	PAO-Z	5330-00-360-0595	MS27030-5	Gasket	3	EA	S9I
7	3	PDOOO	4730-00-360-0589	MS27022-9	Coupling Half Quick Disconnect 1 1/2"M w/M NPT	2	EA	S9C
7	4	XA--Z	4730-01-439-9316	13229E7192	Tee, Pipe	1	EA	S9C
7	5	PDOOO	4730-00-980-9411	MS27024-9	Coupling Half Quick Disconnect 1 1/2"F w/M NPT	1	EA	S9C
7	6	PDO-Z	4730-00-823-5316	MS27029-9	Plug, Quick Disconnect 1 1/2"	1	EA	S9C
7	7	PAO-Z	5325-00-926-5411	H01434M	Ring, Retaining	11	EA	S9I
7		PAO-Z	8030-00-889-3534	A-A-58092	Tape, Antiseizing	V	AR	GSA

SECTION 2 – REPAIR PARTS LISTS
Tee Assembly, Quick Disconnect
1½-Inch Female x 1½-Inch Female x 1½-Inch Male
Figure F-8



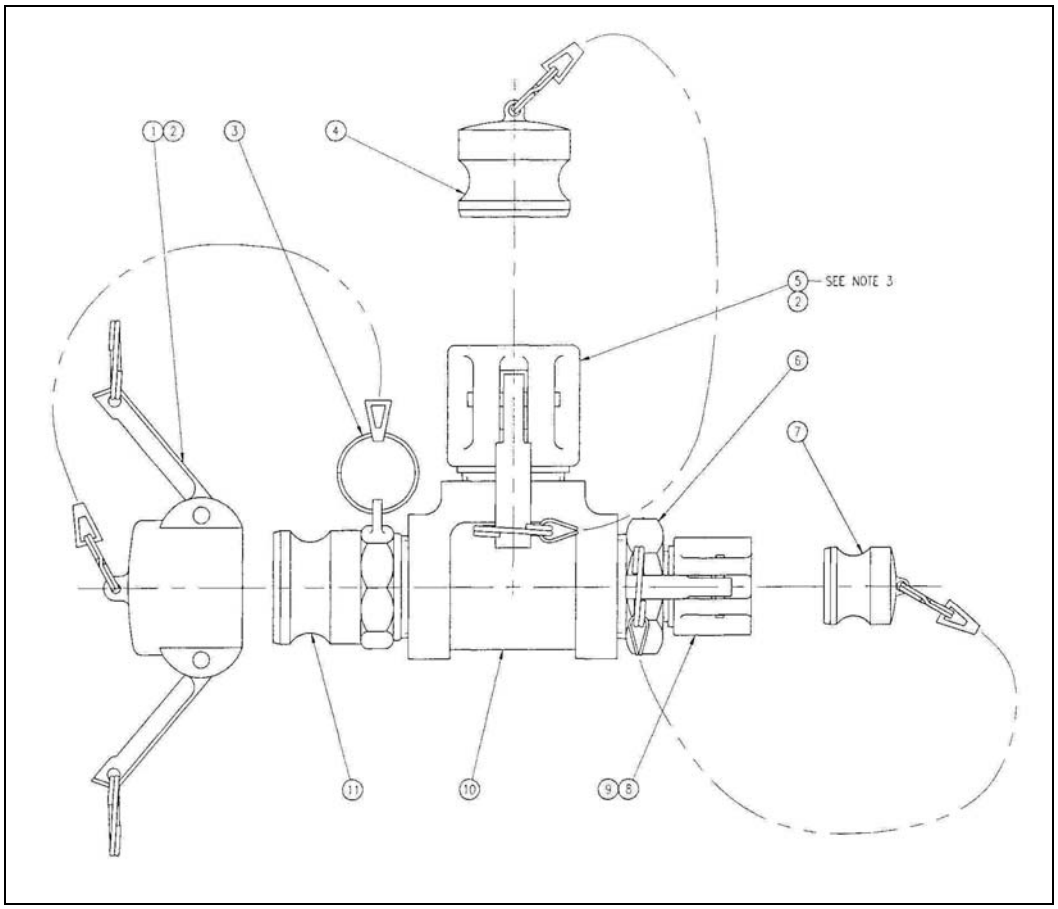
(1)								
(a) FIG NO.	(b) ITEM NO.	(2) SMR	(3) NSN	(4) PART NO.	(5) DESCRIPTION	(6) QTY	(7) UI	(8) SOS
8		PDOOO	4730-01-440-4615	13229E7181	Tee Assembly Quick Disconnect 1 1/2"F x 1 1/2"F x 1 1/2"M	1	EA	S9C
8	1	PDO-Z	4730-00-823-5316	MS27029-9	Plug, Quick Disconnect 1 1/2"	2	EA	S9C
8	2	PDOOO	4730-00-203-1010	MS27026-9	Coupling Half Quick Disconnect 1 1/2"F w/M NPT	2	EA	S9C
8	3	PAO-Z	5330-00-360-0595	MS27030-5	Gasket	3	EA	S9I
8	4	XA--Z	4730-01-439-9316	13229E7192	Tee, Pipe	1	EA	S9C
8	5	PDOOO	4730-00-869-5246	MS27028-9	Cap, Quick Disconnect 1 1/2"	1	EA	S9C
8	6	PDOOO	4730-00-360-0589	MS27022-9	Coupling Half Quick Disconnect 1 1/2"M w/M NPT	1	EA	S9C
8	7	PAO-Z	5325-00-926-5411	H01434M	Ring, Retaining	8	EA	S9I
8		PAO-Z	8030-00-889-3534	A-A-58092	Tape, Antiseizing	V	AR	GSA

SECTION 2 – REPAIR PARTS LISTS
Tee Assembly, Quick Disconnect
1½-Inch Female x 1½-Inch Male x 1-Inch Male
Figure F-9



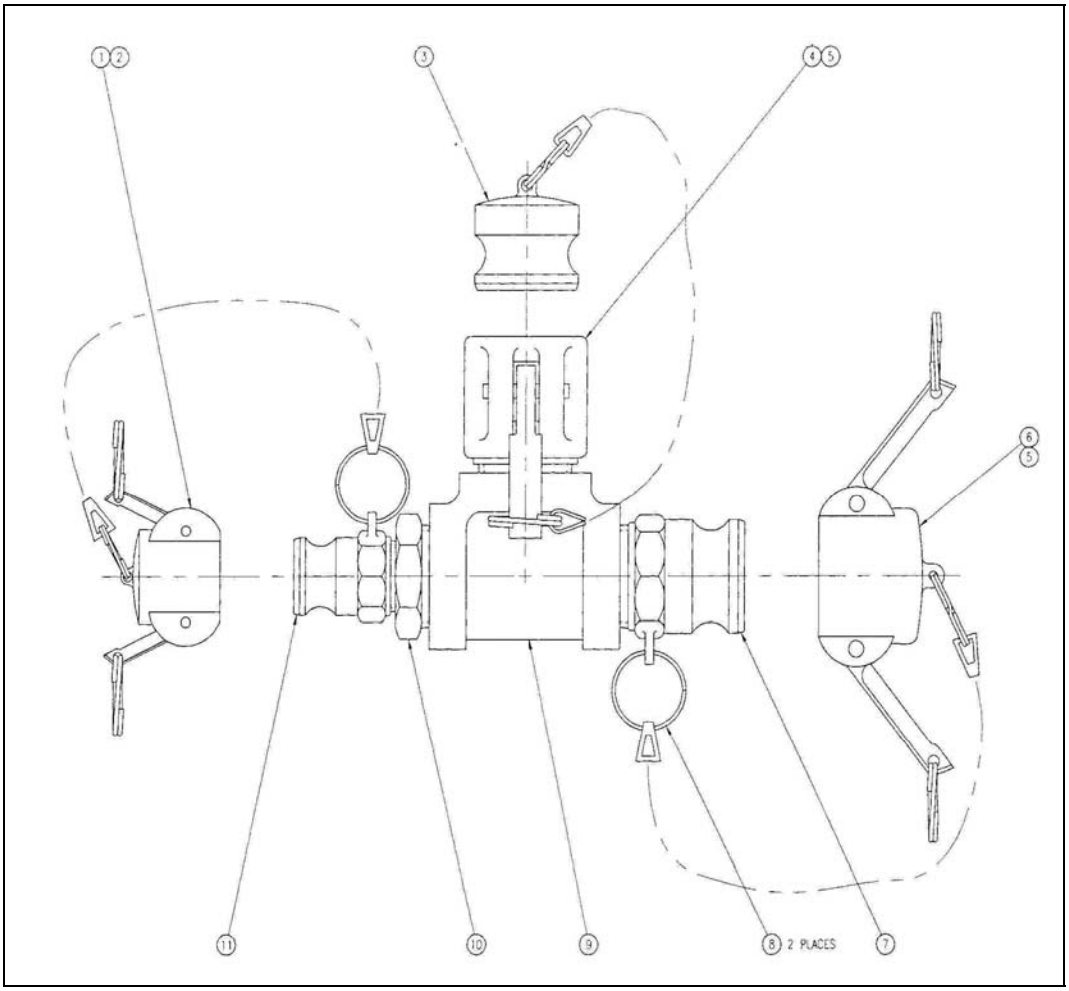
(1)								
(a) FIG NO.	(b) ITEM NO.	(3) SMR	(3) NSN	(4) PART NO.	(5) DESCRIPTION	(6) QTY	(7) UI	(8) SOS
9		PDOOO	4730-01-440-4613	13229E7174	Tee Assembly Quick Disconnect 1 1/2"F x 1 1/2"M x 1"M	1	AY	S9C
9	1	PDO-Z	4730-00-360-0715	MS27029-5	Plug, Quick Disconnect	1	EA	S9C
9	2	PDOOO	4730-00-042-5265	MS27024-5	Coupling Half Quick Disconnect 1"F	1	EA	S9C
9	3	PAO-Z	5330-00-088-9167	MS27030-3	Gasket	2	EA	S9I
9	4	XA--Z	4730-01-439-9291	13229E7191-19	Tee, Pipe	1	EA	S9C
9	5	PDOOO	4730-00-084-7435	MS27022-5	Coupling Half Quick Disconnect 1"M	2	EA	S9C
9	6	PDOOO	4730-00-929-0791	MS27028-5	Cap, Quick Disconnect 1"	2	EA	S9C
9	7	PAO-Z	5325-00-926-5411	H01434M	Ring, Retaining	8	EA	S9I
9		PAO-Z	8030-00-889-3534	A-A-58092	Tape, Antiseizing	V	AR	GSA

SECTION 2 – REPAIR PARTS LISTS
Tee Assembly, Quick Disconnect
1½-Inch Male x 1-Inch Female x 1½-Inch Female
Figure F-10



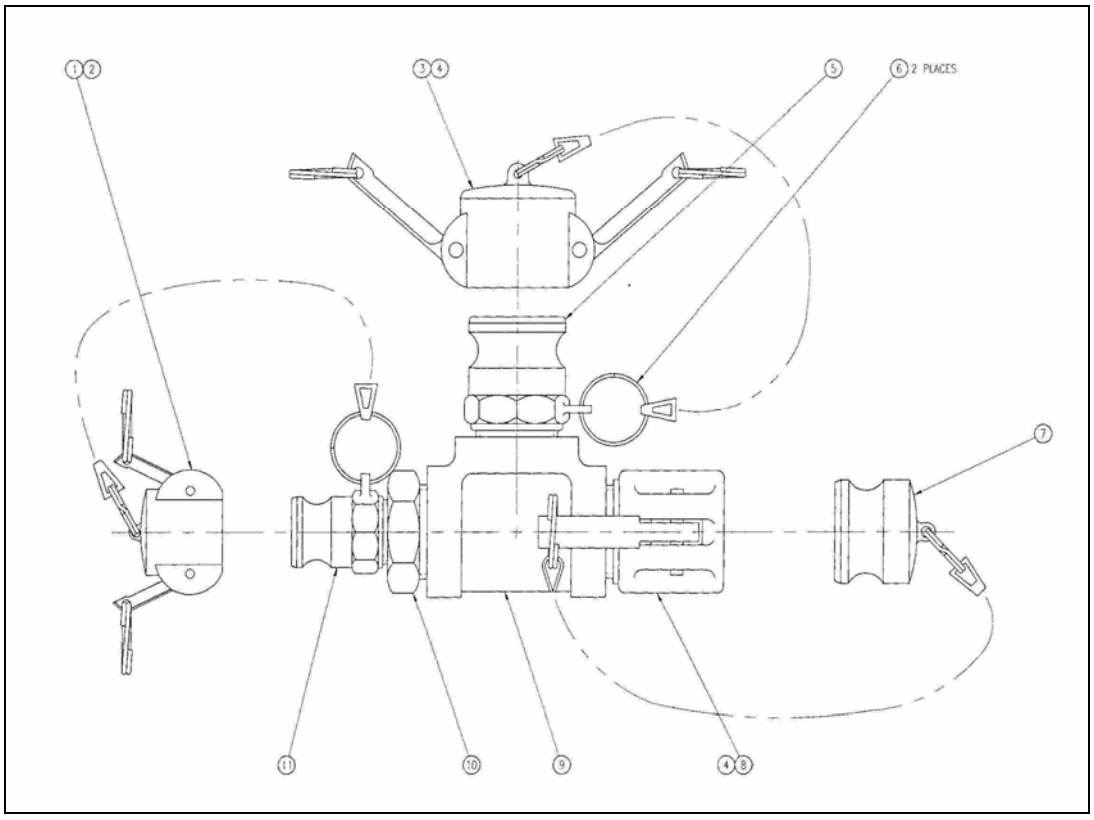
(1)								
(a) FIG NO.	(b) ITEM NO.	(2) SMR	(3) NSN	(4) PART NO.	(5) DESCRIPTION	(6) QTY	(7) UI	(8) SOS
10		PDOOO	4730-01-440-4931	13230E5716	Tee Assembly Quick Disconnect 1 1/2"M x 1"M x 1 1/2"F	1	EA	S9C
10	1	PDOOO	4730-00-869-5246	MS27028-9	Cap, Quick Disconnect 1 1/2"	1	EA	S9C
10	2	PAO-Z	5330-00-360-0595	MS27030-5	Gasket	2	EA	S9I
10	3	PAO-Z	5325-00-926-5411	H01434M	Ring, Retaining	10	EA	S9I
10	4	PDO-Z	4730-00-823-5316	MS27029-9	Plug, Quick Disconnect 1 1/2"	1	EA	S9C
10	5	PDOOO	4730-00-203-1010	MS27026-9	Coupling Half Quick Disconnect 1 1/2"F w/M NPT	1	EA	S9C
10	6	XA--Z		MS4001-9	Reducer, Pipe	1	EA	
10	7	PDO-Z	4730-00-360-0715	MS29029-5	Plug, Quick Disconnect 1 "	1	EA	S9C
10	8	PDOOO	4730-00-360-0710	MS27026-5	Coupling Half Quick Disconnect 1"F w/M NPT	1	EA	S9C
10	9	PAO-Z	5330-00-088-9167	MS27030-4	Gasket	1	EA	S9I
10	10	XA--Z	4730-01-439-9316	13229E7192	Tee, Pipe	1	EA	S9C
10	11	PDOOO	4730-00-360-0589	MS27022-9	Coupling Half Quick Disconnect 1 1/2"M w/M NPT	1	EA	S9C
10		PAO-Z	8030-00-889-3534	A-A-58092	Tape, Antisiezing	V	AR	GSA

SECTION 2 – REPAIR PARTS LISTS
Tee Assembly, Quick Disconnect
1-Inch Male x 1½-Inch Male x 1½-Inch Female
Figure F-11



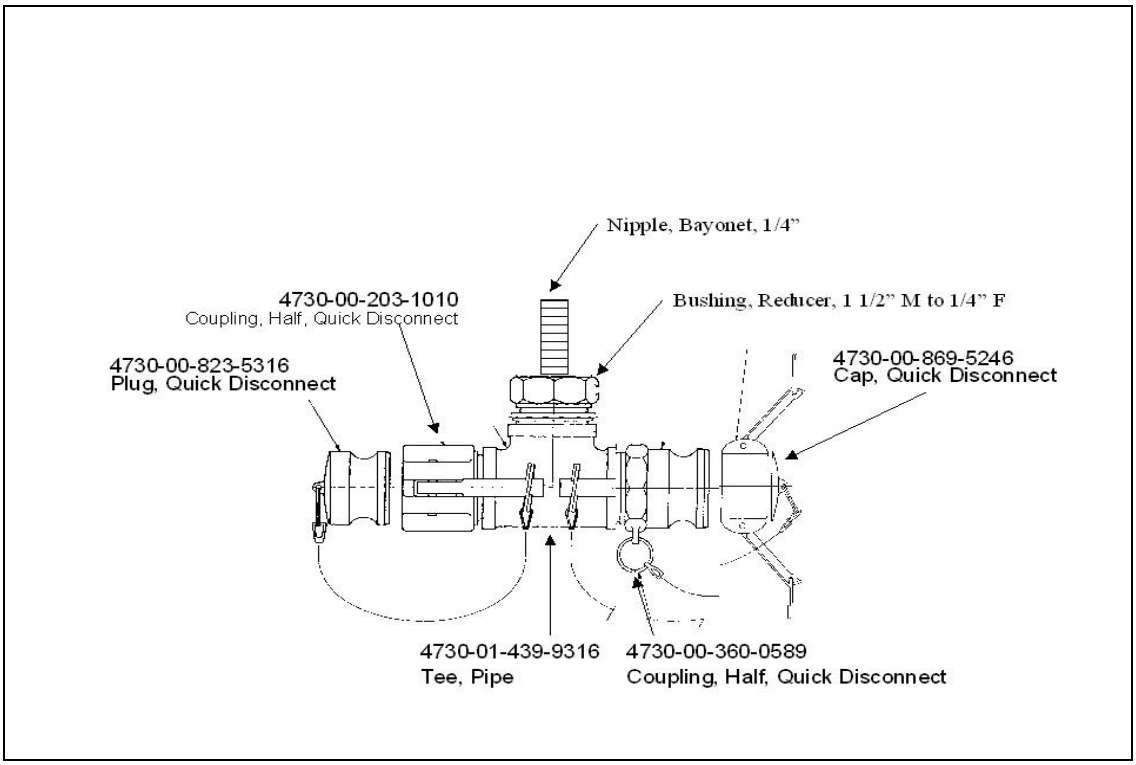
(1)								
(a) FIG NO.	(b) ITEM NO.	(2) SMR	(3) NSN	(4) PART NO.	(5) DESCRIPTION	(6) QTY	(7) UI	(8) SOS
11		PDOOO	4730-01-440-4933	13230E5717	Tee Assembly Quick Disconnect 1"M x 1 1/2"M x 1 1/2"F	1	EA	S9C
11	1	PDOOO	4730-00-360-0791	MS27028-5	Cap, Quick Disconnect 1 "	1	EA	S9C
11	2	PAO-Z	5330-00-088-9167	MS27030-4	Gasket	2	EA	S9I
11	3	PAO-Z	4730-00-823-5316	MS27029-9	Plug, Quick Disconnect 1 1/2"	1	EA	S9C
11	4	PDOOO	4730-00-203-1010	MS27026-9	Coupling Half Quick Disconnect 1 1/2"F w/M NPT	1	EA	S9C
11	5	PAO-Z	5330-00-360-0595	MS27030-5	Gasket	2	EA	S9I
11	6	PDOOO	4730-00-869-5246	MS27028-9	Cap, Quick Disconnect 1 1/2"	1	EA	S9C
11	7	PDOOO	4730-00-360-0589	MS27022-9	Coupling Half Quick Disconnect 1 1/2"M w/M NPT	1	EA	S9C
11	8	PAO-Z	5325-00-926-5411	H01434M	Ring, Retaining	11	EA	S9I
11	9	XA--Z	4730-01-439-9316	13229E7192	Tee, Pipe	1	EA	S9C
11	10	XA-Z		MS4001-9	Reducer, Pipe	1	EA	
11	11	PDOOO	4730-00-084-7435	MS27022-5	Coupling Half Quick Disconnect 1"M w/M NPT	1	EA	S9C
11		PAO-Z	8030-00-889-3534	A-A-58092	Tape, Antisiezing	V	AR	GSA

SECTION 2 – REPAIR PARTS LISTS
Tee Assembly, Quick Disconnect
1-Inch Male x 1½-Inch Female x 1½-Inch Male
Figure F-12



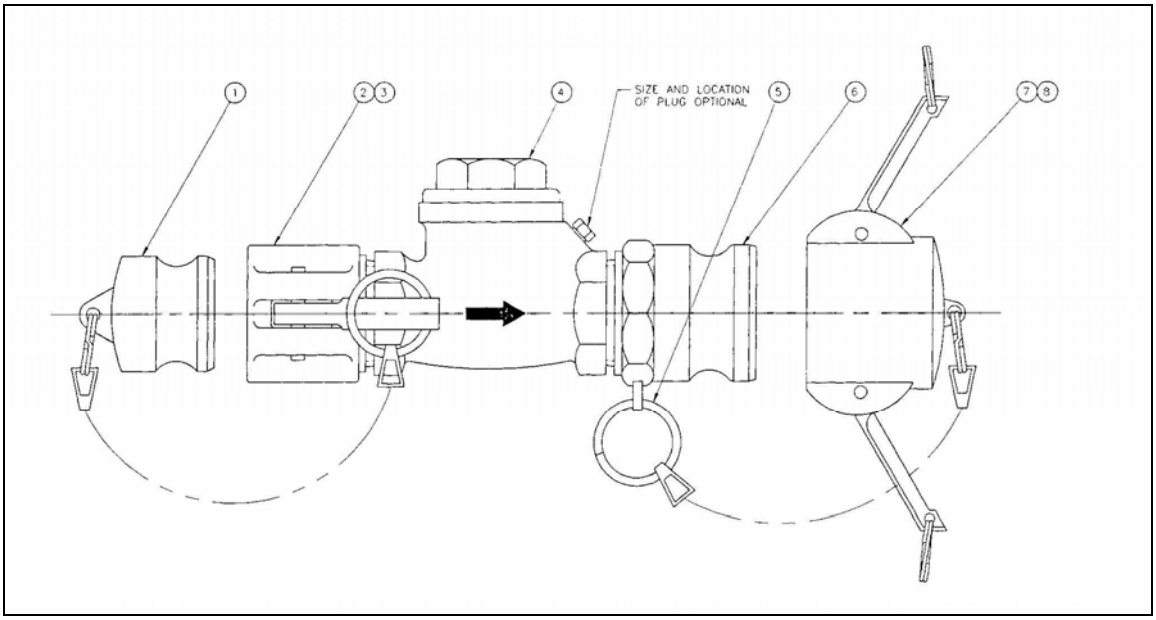
(1)								
(a) FIG NO>	(b) ITEM NO>	(2) SMR	(3) NSN	(4) PART NO.	(5) DESCRIPTION	(6) QTY	(7) UI	(8) SOS
12		PDOOO	4730-01-440-4938	13230E5717	Tee Assembly Quick Disconnect 1 "M x 1 1/2"F x 1 1/2"M	1	EA	S9C
12	1	PDOOO	4730-00-360-0791	MS27028-5	Cap, Quick Disconnect 1"	1	EA	S9C
12	2	PAO-Z	5330-00-088-9167	MS27030-4	Gasket	1	EA	S9I
12	3	PAO-Z	4730-00-823-5316	MS27029-9	Plug, Quick Disconnect 1 1/2"	1	EA	S9C
12	4	PDOOO	4730-00-203-1010	MS27026-9	Coupling Half Quick Disconnect 1 1/2"F w/M NPT	1	EA	S9C
12	5	PAO-Z	5330-00-360-0595	MS27030-5	Gasket	2	EA	S9I
12	6	PDOOO	4730-00-869-5246	MS27028-9	Cap, Quick Disconnect 1 1/2"	1	EA	S9C
12	7	PDOOO	4730-00-360-0589	MS27022-9	Coupling Half Quick Disconnect 1 1/2"M w/M NPT	1	EA	S9C
12	8	PAO-Z	5325-00-926-5411	H01434M	Ring, Retaining	11	EA	S9I
12	9	XA--Z	4730-01-439-9316	13229E7192	Tee, Pipe	1	EA	S9C
12	10	XA--Z		MS4001-9	Reducer, Pipe	1	EA	
12	11	PDOOO	4730-00-084-7435	MS27022-5	Coupling Half Quick Disconnect 1"M w/M NPT	1	EA	S9C
12		PAO-Z	8030-00-889-3534	A-A-58092	Tape, Antisiezing	V	AR	GSA

SECTION 2 – REPAIR PARTS LISTS
Tee Assembly, Quick Disconnect
1½-Inch Female x 1½-Inch Male x ¼-Inch Male
Figure F-13



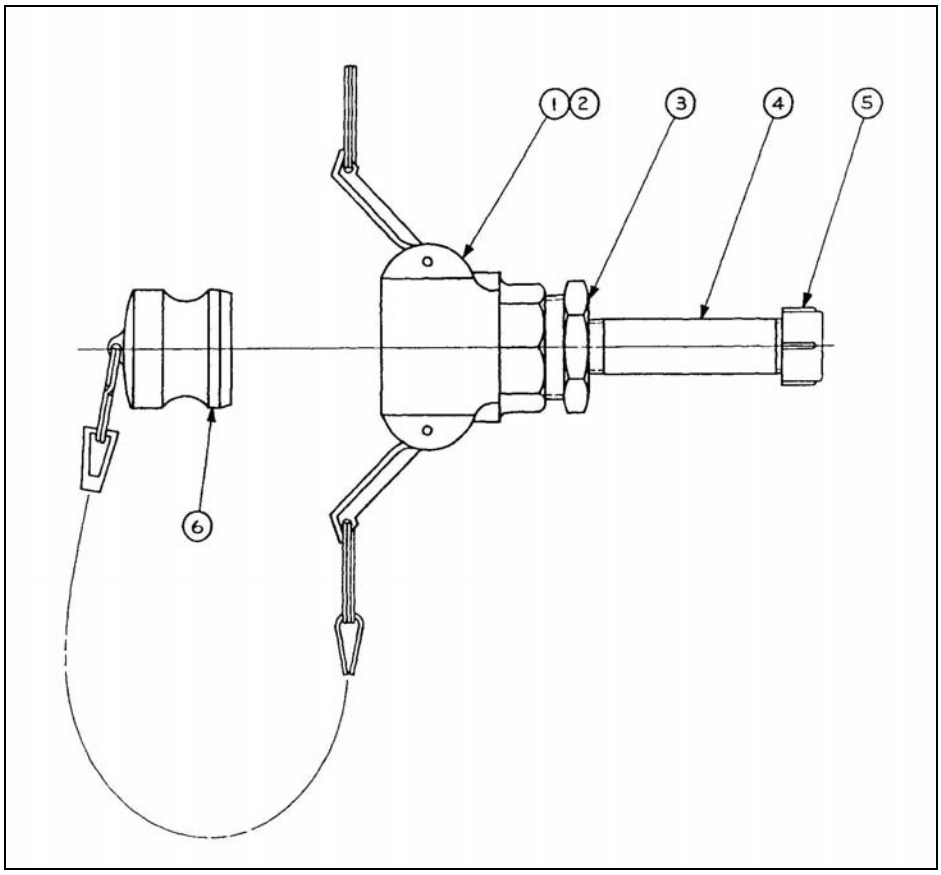
(1)								
(a) FIG NO.	(b) ITEM NO.	(2) SMR	(3) NSN	(4) PART NO.	(5) DESCRIPTION	(6) QTY	(7) UI	(8) SOS
13		PDOOO	4730-01-487-3575		Tee Assembly Quick Disconnect 1 1/2"F x 1 1/2"M 1/4"M	1	EA	S9M
13		PAO-Z	4730-00-823-5316	MS27029-9	Plug, Quick Disconnect 1 1/2"	1	EA	S9C
13		PDOOO	4730-00-203-1010	MS27026-9	Coupling Half Quick Disconnect 1 1/2"F w/M NPT	1	EA	S9C
13		XA-Z	4730-01-439-9316	13229E7192	Tee, Pipe	1	EA	S9C
13		PDOOO	4730-00-360-0589	MS27022-9	Coupling Half Quick Disconnect w/M NPT	1	EA	S9C
13		PDOOO	4730-00-869-5246	MS27028-9	Cap, Quick Disconnect 1 1/2"	1	EA	S0C
13		XA-Z			Bushing, Reducer 1 1/2"M to 1/4" F	1	EA	
13		PAO-Z	5330-00-360-0595	MS27030-5	Gasket	2	EA	S9I
13		PAO-Z	5325-00-926-5411	H01434M	Ring, Retaining	7	EA	S9I
13		PAO-Z	8030-00-889-3534	A-A-58092	Tape, Antisiezing	V	AR	GSA

SECTION 2 – REPAIR PARTS LISTS
Valve, Check
Figure F-14



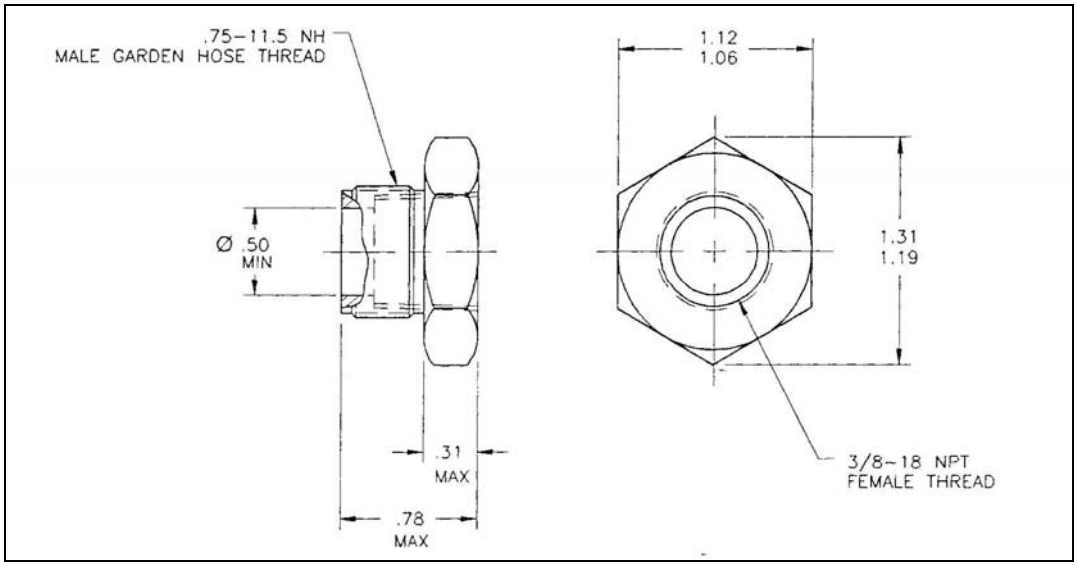
(1)								
(a) FIG NO.	(b) ITEM NO.	(2) SMR	(3) NSN	(4) PART NO.	(5) DESCRIPTION	(6) QTY	(7) UI	(8) SOS
14	1	PDOOO	4820-01-440-5919	13229E7197	Valve, Check	1	AY	S9C
14	2	PAO-Z	4730-00-823-5316	MS27029-9	Plug, Quick Disconnect 1 1/2"	1	EA	S9C
14	3	PDOOO	4730-00-980-9411	MS27024-9	Coupling, Quick Disconnect 1 1/2" F	1	EA	S9C
14	4	XA--Z	4730-01-440-0038	13229E7191	Tee, Pipe	1	EA	S9C
14	5	PAO-Z	5325-00-926-5411	H01434M	Ring, Retaining	6	EA	S9I
14	6	PDOOO	4730-00-432-7448	MS49001-9	Coupling, Quick Disconnect 2"M	1	EA	S9C
14	7	PDOOO	4730-00-649-9100	MS27028-11	Cap, Quick Disconnect 2"	1		S9C
14		PAO-Z	8030-00-889-3534	A-A-58092	Tape, Antisiezing	V	AR	GSA

SECTION 2 – REPAIR PARTS LISTS
Plug Quick Disconnect
Figure F-15



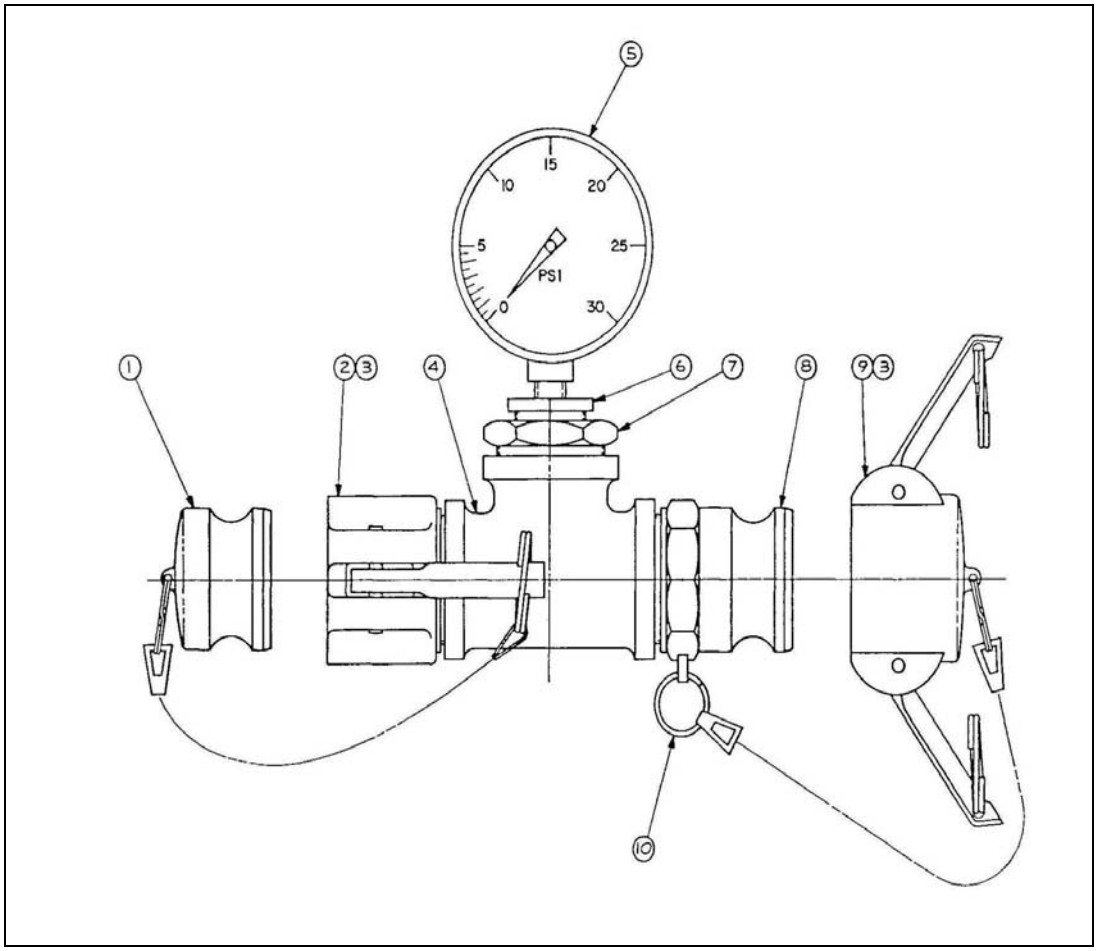
(1)								
(a) FIG NO.	(b) ITEM NO.	(2) SMR	(3) NSN	(4) PART NO.	(5) DESCRIPTION	(6) QTY	(7) UI	(8) SOS
15	1	PDOOO	4730-01-415-6403	13229E7170	Plug Quick Disconnect	1	EA	S9C
15	2	PDOOO	4730-00-980-9411	MS27024-9	Coupling Half Quick Disconnect 1 1/2"F w/NPT	1	EA	S9C
15		PAO-Z	5330-00-088-9167	MS27030-3	Gasket	1	EA	S9I
15	3	PDOOO	4730-00-858-3490	MIL-F-52618/8	Bushing, Pipe	1	EA	S9C
15	4	XA--Z		13229E7193-1	Nipple, Pipe	1	EA	
15	5	PDOOO	5340-00-804-5230	MIL-C-5501/6	Cap, Protective	1	EA	S9I
15	6	PAO-Z	4730-00-649-9100	13229E7191-13	Cap, Quick Disconnect, 2"	1	EA	S9C
15		PAO-Z	8030-00-889-3534	A-A-58092	Tape, Antisiezing	V	AR	GSA
15		PAO-Z	5325-00-926-5411	H01434M	Ring, Retaining	3	EA	S9I

SECTION 2 – REPAIR PARTS LISTS
Adapter, Straight Hose to Boss
Figure F-16



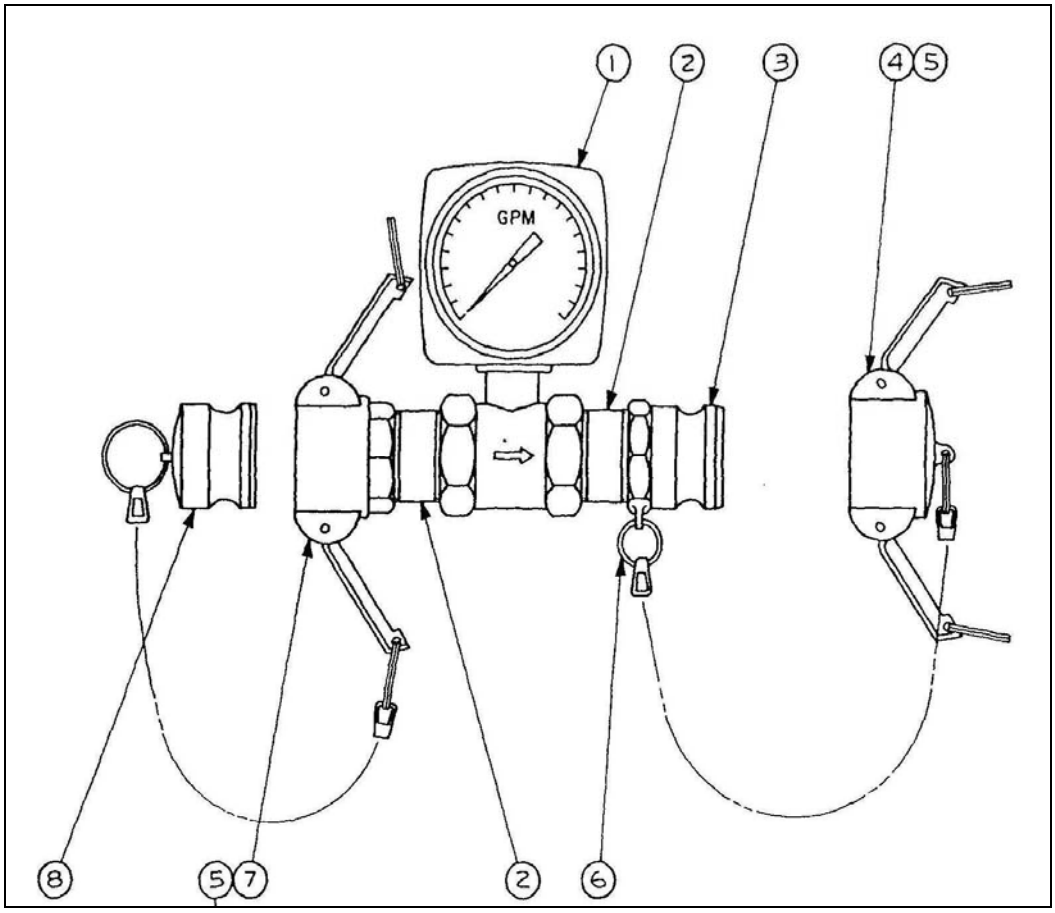
(1)								
(a) FIG NO.	(b) ITEM NO.	(2) SMR	(3) NSN	(4) PART NO.	(5) DESCRIPTION	(6) QTY	(7) UI	(8) SOS
16	1	PAO-Z	4730-01-415-6420	13229E7195	Adapter, Straight Hose to Boss	1	EA	A12

SECTION 2 – REPAIR PARTS LISTS
Pipe Assembly, Potable Water
Figure F-17



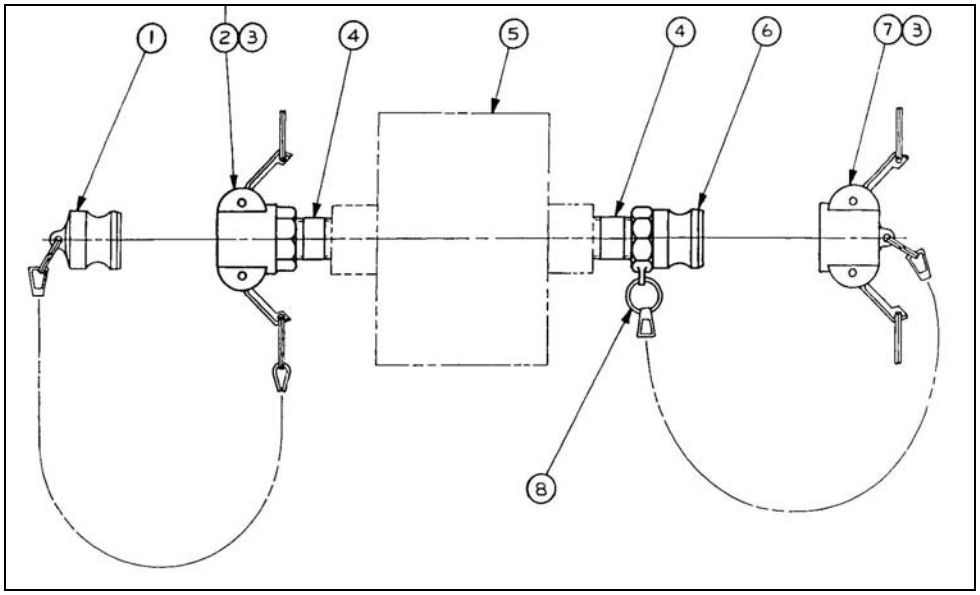
(1)								
(a) FIG NO.	(b) ITEM NO.	(2) SMR	(3) NSN	(4) PART NO.	(5) DESCRIPTION	(6) QTY	(7) UI	(8) SOS
17		PDOOO	4610-01-440-4086	13229E7162	Pipe Assembly, Potable Water	1	EA	S9C
17	1	PDOOO	4730-00-968-5246	MS27028-9	Cap, Quick Disconnect 1 1/2"	1	EA	S9C
17	2	PDOOO	4730-00-203-1010	MS27026-9	Coupling Half Quick Disconnect 1 1/2"F w/M NPT	1	EA	S9C
17	3	PAO-Z	5330-00-360-0595	MS27030-5	Gasket	2	EA	S9I
17	4	XA--Z	4730-01-440-0038	13229E7191	Tee, Pipe	1	EA	S9C
17	5	XA--Z	6685-00-764-3056	J0042E	Gauge, Pressure Dial, 0-30 PSI	1	EA	S9G
17	6	XA--Z			Bushing, Pipe Reducer	1	EA	
17	7	PDOOO	4730-00-196-0899	WWP471	Bushing, Pipe 1 1/2" x 1"	1	EA	S9C
17	8	PDOOO	4730-00-360-0589	MS27022-9	Coupling Half Quick Disconnect 1 1/2" M w/M NPT	1	EA	S9C
17	9	PDOOO	4730-00-360-0589	MS27022-9	Coupling Half Quick Disconnect 1 1/2"M w/M NPT	1	EA	S9C
17	10	PAO-Z	5325-00-926-5411	H01434M	Ring, Retaining	7	EA	S9I
17		PAO-Z	8030-00-889-3534	A-A-58092	Tape, Antisiezing	V	AR	GSA

SECTION 2 – REPAIR PARTS LISTS
Pipe Assembly, Potable Water
Figure F-18



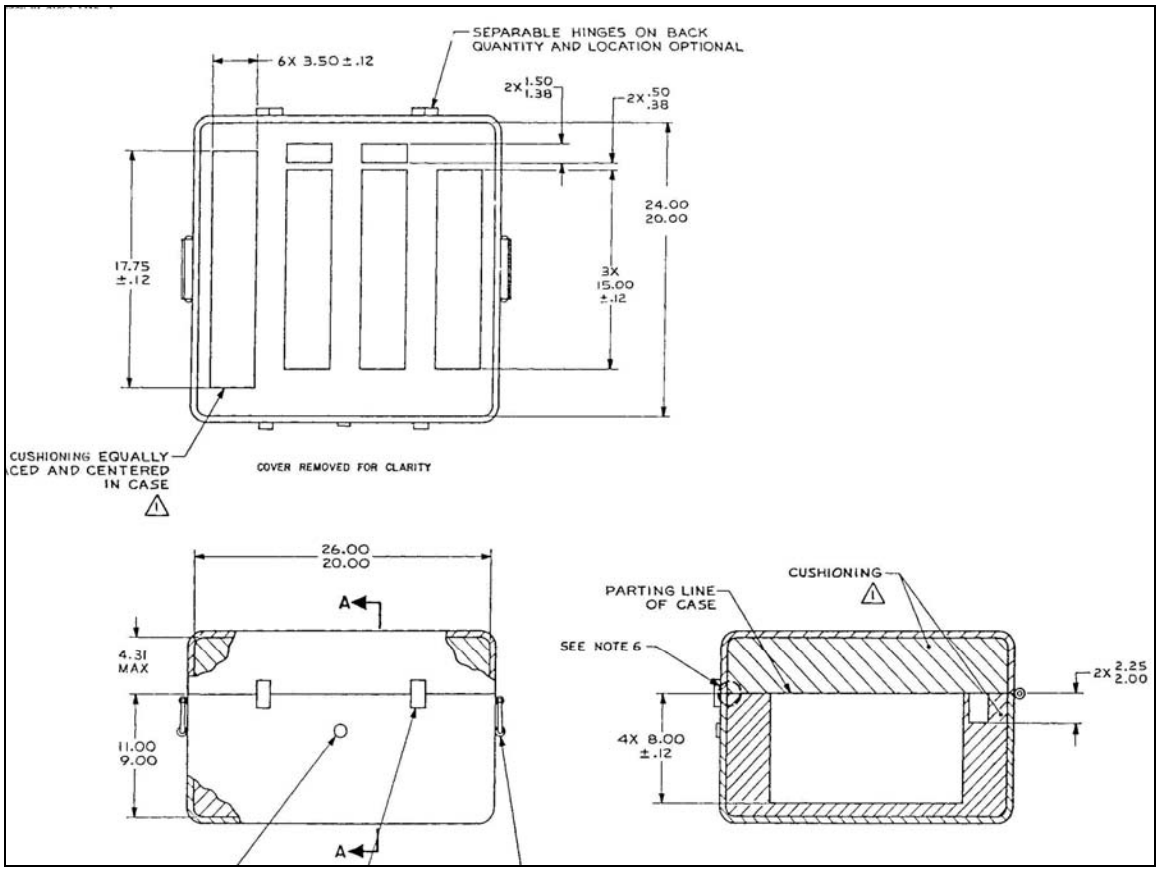
(1)								
(a) FIG NO.	(b) ITEM NO.	(2) SMR	(3) NSN	(4) PART NO.	(5) DESCRIPTION	(6) QTY	(7) UI	(8) SOS
18		PDOOO	4610-01-440-4088	13229E7165	Pipe Assembly Potable Water	1	AY	S9C
18	1	XA--Z			Flowmeter	1	EA	
18	2	XA--Z			Tee, Pipe	1	EA	
18	3	PDOOO	4730-00-360-0589	MS27022-9	Coupling Half Quick Disconnect 1 1/2"M w/M NPT	1	EA	S9C
18	4	PDOOO	4730-00-869-5246	MS27028-9	Cap, Quick Disconnect 1 1/2"	1	EA	S9C
18	5	PAO--Z	5330-00-360-0595	MS27030-5	Gasket	2	EA	S9I
18	6	PAO--Z	5325-00-926-5411	H01434M	Ring, Retaining	7	EA	S9I
18	7	PDOOO	4730-00-203-1010	MS27026-9	Coupling Half Quick Disconnect 1 1/2"F w/M NPT	1	EA	S9C
18	8	PDO-Z	4730-00-823-5316	MS27029-9	Plug, Quick Disconnect 1 1/2"	1	EA	S9C
18		PAO-Z	8030-00-889-3534	A-A-58092	Tape, Antisiezing	V	AR	GSA

SECTION 2 – REPAIR PARTS LISTS
Indicator Assembly
Figure F-19



(1)								
(a) FIG NO.	(b) ITEM NO.	(2) SMR	(3) NSN	(4) PART NO.	(5) DESCRIPTION	(6) QTY	(7) UI	(8) SOS
19		PDOOO	4610-01-440-4090	13229E7163	Indicator Assembly	1	AY	S9C
19	1	PDO-Z	4730-00-823-5316	MS27029-9	Plug, Quick Disconnect 1 1/2"	1	EA	S9C
19	2	PDOOO	4730-00-203-1010	MS27026-9	Coupling Half Quick Disconnect 1 1/2"F w/M NPT	1	EA	S9C
19	3	PAO-Z	5330-00-360-0595	MS27030-5	Gasket	2	EA	S9I
19	4	PAO-Z	4730-01-440-0076	13229E7191-23	Bushing, Pipe 1 1/2" to 1"	2	EA	S9C
19	5	XA--Z			Indicator	1	EA	
19	6	PDOOO	4730-00-360-0589	MS27022-9	Coupling Half Quick Disconnect 1 1/2"M w/M NPT	1	EA	S9C
19	7	PDOOO	4730-00-869-5246	MS27028-9	Cap, Quick Disconnect 1 1/2"	1	EA	S9C
19	8	PAO-Z	5325-00-926-5411	H01434M	Ring, Retaining	7	EA	S9I
19		PAO-Z	8030-00-889-3534	A-A-58092	Tape, Antiseizing	V	AR	GSA

SECTION 2 – REPAIR PARTS LISTS
Case, Electrical-Electronic Test
Figure F-20

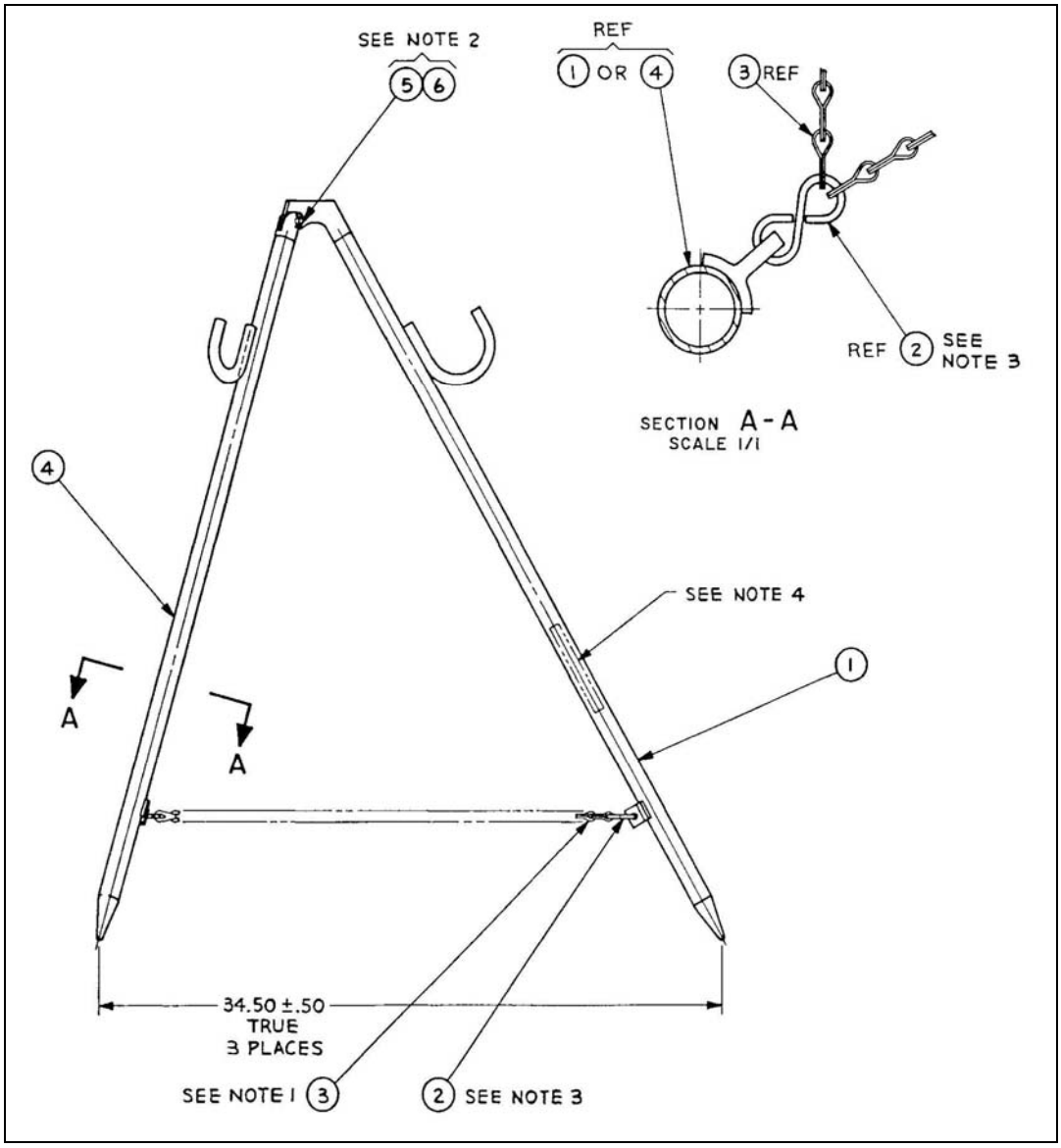


	(1)							
(a) FIG NO.	(b) ITEM NO.	(2) SMR	(3) NSN	(4) PART NO.	(5) DESCRIPTION	(6) QTY	(7) UI	(8) SOS
20	1	PR--Z	6625-01-449-2857	13229E7189	Case, Electrical-Electronic Test	1	EA	S9M

Replaced by

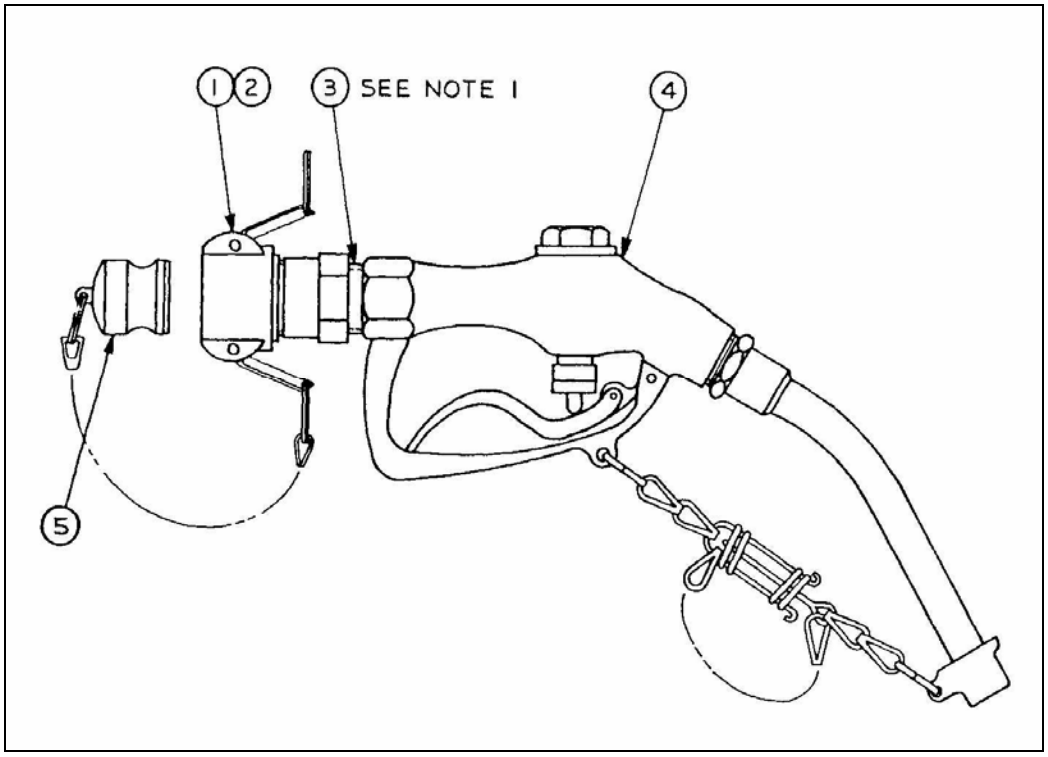
	(1)							
(a) FIG NO.	(b) ITEM NO.	(2) SMR	(3) NSN	(4) PART NO.	(5) DESCRIPTION	(6) QTY	(7) UI	(8) SOS
20	1	PDOOO	6545-01-499-5676	15678-200	Case, Medical Supply and Instrument	1	EA	S9M

SECTION 2 – REPAIR PARTS LISTS
Stand Assembly, Distribution Nozzle
Figure F-21



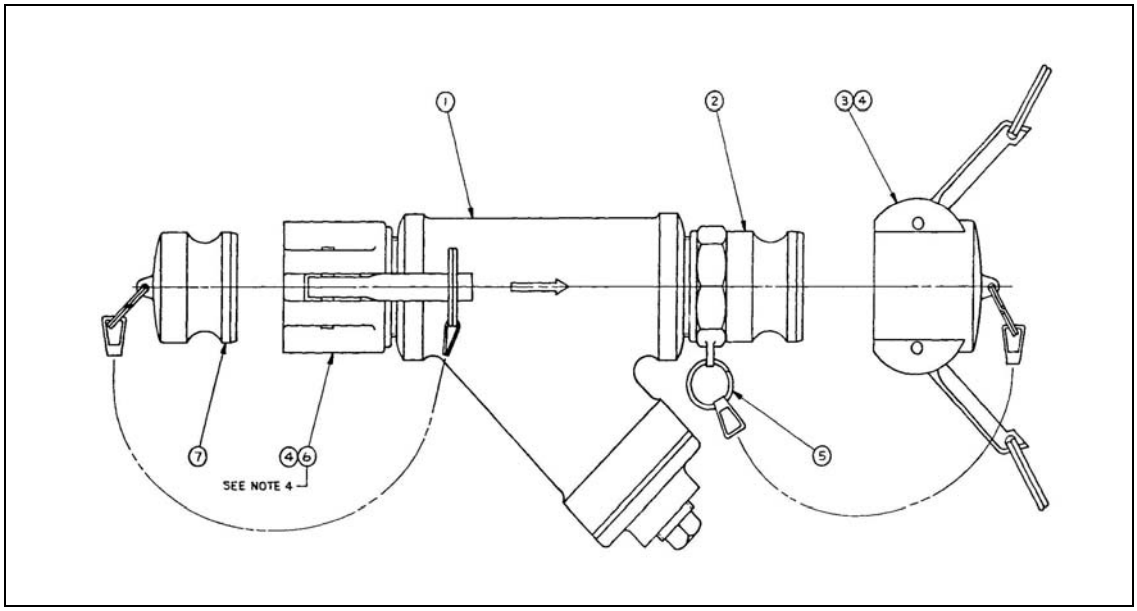
(1)								
(a) FIG NO.	(b) ITEM NO.	(2) SMR	(3) NSN	(4) PART NO.	(5) DESCRIPTION	(6) QTY	(7) UI	(8) SOS
21	1	PDOOO	4930-01-120-7426	13225E9140	Stand Assembly Distribution Nozzle	1	EA	S9I

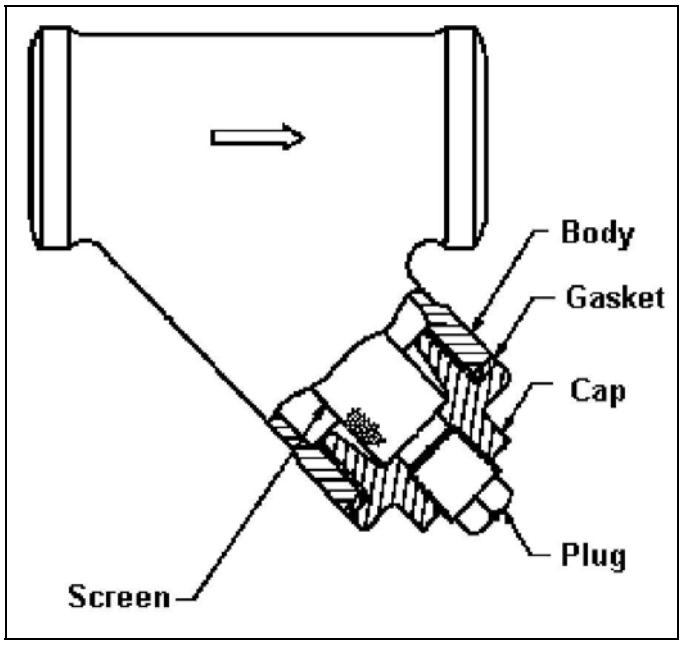
SECTION 2 – REPAIR PARTS LISTS
Nozzle Assembly, Water
Figure F-22



(1)								
(a) FIG NO.	(b) ITEM NO.	(2) SMR	(3) NSN	(4) PART NO	(5) DESCRIPTION	(6) QTY	(7) UI	(8) SOS
22		PDOOO	4610-01-440-6834	13229E7168	Nozzle Assembly Water	1	AY	S9C
22	1	PDOOO	4730-00-042-5265	MS27024-5	Coupling Half Quick Disconnect 1"F w/F NPT	1	EA	S9C
22	2	PAO-Z	5330-00-088-9167	MS27030-4	Gasket	1	EA	S9I
22	3	XA--Z			Bushing Pipe	1	EA	
22	4	XA--Z			Nozzle, Water	1	EA	
22		PAO-Z	8030-00-889-3535	A-A-58092	Tape, Antiseizing	V	AR	GSA

SECTION 2 – REPAIR PARTS LISTS
Strainer, Sediment
Figure F-23



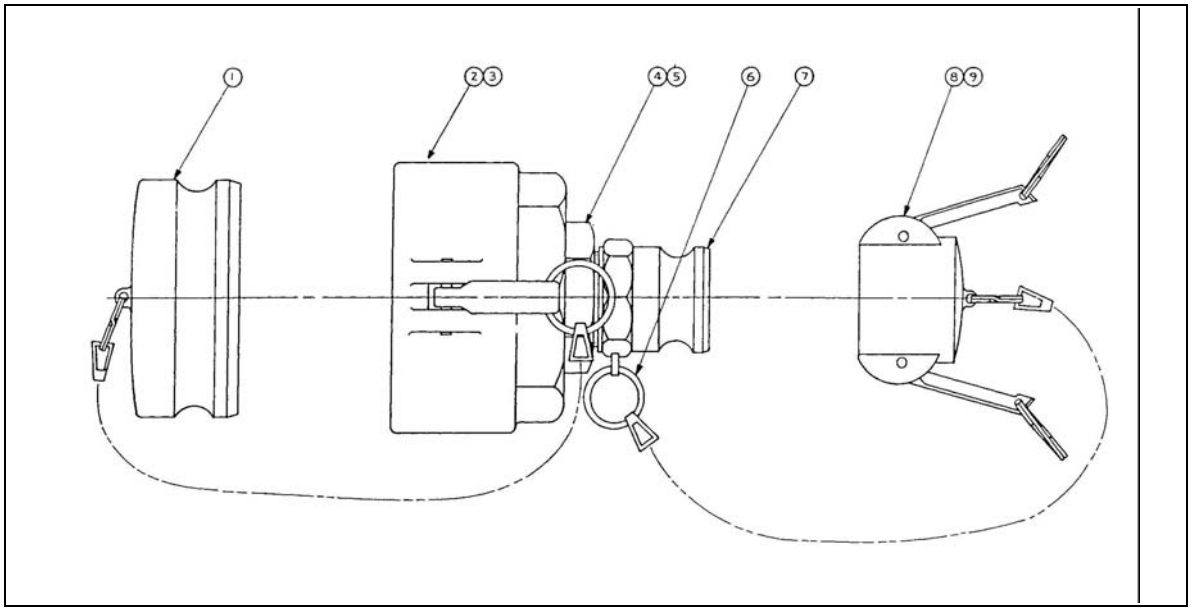


(1)								
(a) FIG NO.	(b) ITEM NO.	(2) SMR	(3) NSN	(4) PART NO.	(5) DESCRIPTION	(6) QTY	(7) UI	(8) SOS
23		PDOOO	4730-01-440-7662	13229E7180	Strainer Assembly	1	EA	S9C
23	1	PAO-Z	4730-01-440-9103	13229E7179	Strainer, Sediment	1	EA	S9C
23	2	PDOOO	4730-00-360-0589	MS27022-9	Coupling Half Quick Disconnect 1 1/2"M NPT	1	EA	S9C
23	3	PDOOO	4730-00-869-5246	MS27028-9	Cap, Quick Disconnect 1 1/2"	1	EA	S9C
23	4	PAO-Z	5330-00-360-0595	MS27030-5	Gasket	1	EA	S9I
23	5	PAO-Z	5325-00-926-5411	H01434M	Ring, Retaining	5	EA	S9I
23	6	PDOOO	4730-00-980-9411	MS27024-9	Coupling Half Quick Disconnect 1 1/2"F NPT	1	EA	S9C
23	7	PAO-Z	4730-00-823-5316	MS27029-9	Plug, Quick Disconnect 1 1/2"	1	EA	S9C
23		PAO-Z	8030-00-889-3534	A-A-58092	Tape, Antiseizing	V	AR	GSA

SECTION 2 – REPAIR PARTS LISTS
Cage, Wire, Folding
Figure F-24

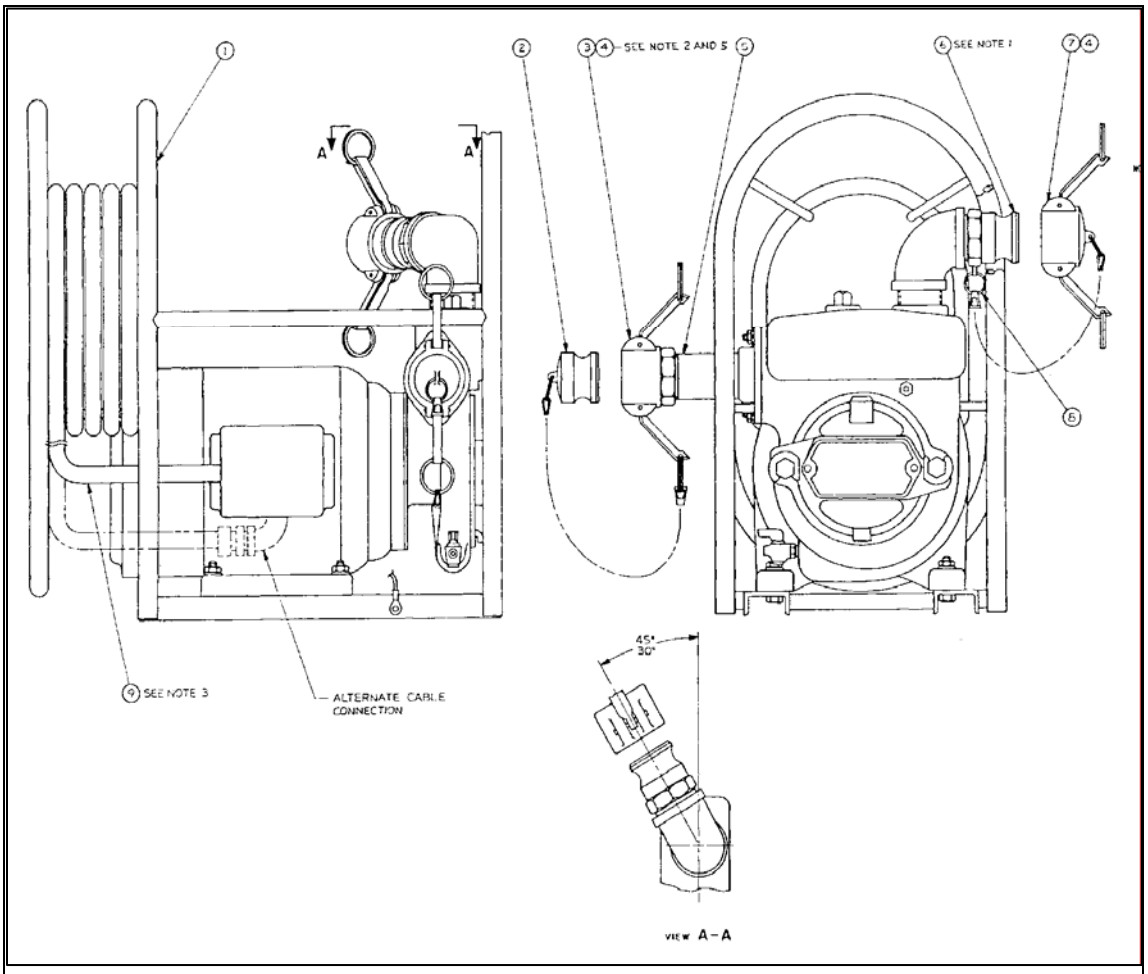
(1)								
(a) FIG NO.	(b) ITEM NO.	(2) SMR	(3) NSN	(4) PART NO.	(5) DESCRIPTION	(6) QTY	(7) UI	(8) SOS
24	1	PD--Z	3990-01-505-5922	W-2-404-836-SP-SJF	Cage, Wire Folding	1	EA	LP

SECTION 2 – REPAIR PARTS LISTS
Adapter Assembly, Quick Disconnect
4-Inch Female to 1½-Inch Male
Figure F-25



(1)								
(a) FIG NO.	(b) ITEM NO.	(2) SMR	(3) NSN	(4) PART NO.	(5) DESCRIPTION	(6) QTY	(7) UI	(8) SOS
25		PDOOO	4730-01-445-5188	13229E7190	Adapter Assembly Quick Disconnect 4"F to 1 1/2"M	1	EA	S9C
25	1	PDO-Z	4730-00-640-6188	MS27029-17	Plug, Quick Disconnect 4"	1	EA	S9C
25	2	PDOOO	4730-01-020-4763	MS27024-17	Coupling Half Quicj Disconnect	1	EA	S9C
25	3	PAO-Z	5330-00-899-4509	MS27030-9	Gasket	1	EA	S9I
25	4	XA--Z	4730-01-440-0080	13229E7191-24	Fitting, Pipe	1	EA	S9C
25	5	PAO-Z	8030-00-889-3534	H01434M	Tape, Antiseizing	V	AR	GSA
25	6	PAO-Z	5325-00-926-5411	A-A-58092	Ring, Retaining	6	EA	S9I
25	7	PDOOO	4730-00-360-0589	MS27022-9	Coupling Half Quick Disconnect 1 1/2"M w/M NPT	1	EA	S9C
25	8	PDOOO	4730-00-869-5246	MS27028-9	Cap, Quick Disconnect 1 1/2"	1	EA	S9C
25	9	PAO-Z	5330-00-360-0595	MS27030-5	Gasket	1	EA	S9I

SECTION 2 – REPAIR PARTS LISTS
Pump Assembly, Centrifugal
65 GPM
Figure F-26



(1)

(a) FIG NO	(b) ITEM NO	(3) NSN	(4) PART NO.	(5) DESCRIPTION	(6) QTY	(7) UI
26		4320-01-440-4421	13229E7159	Pump Assembly, Centrifugal	2	EA

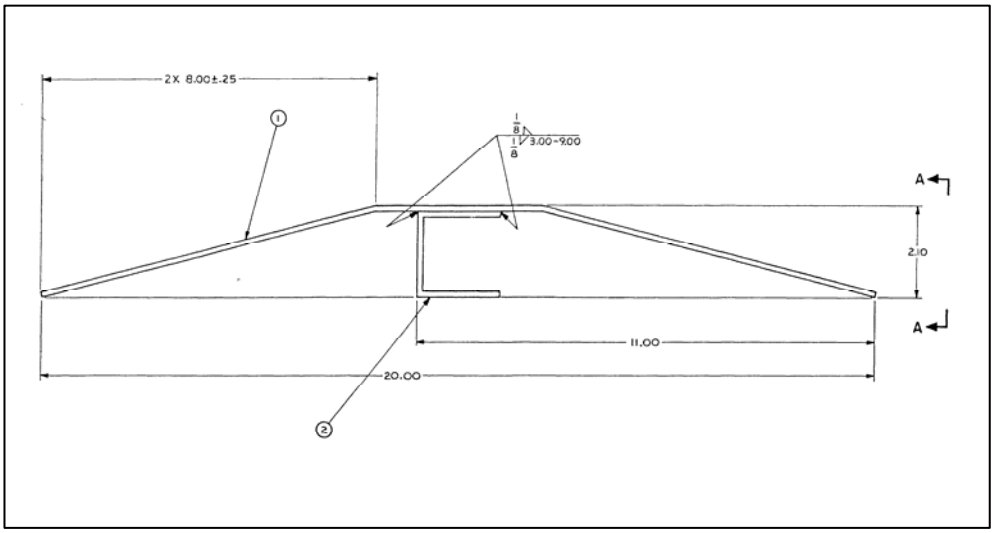
SECTION 2 – REPAIR PARTS LISTS
Heater, Water, 9,000 Watts
Figure F-27

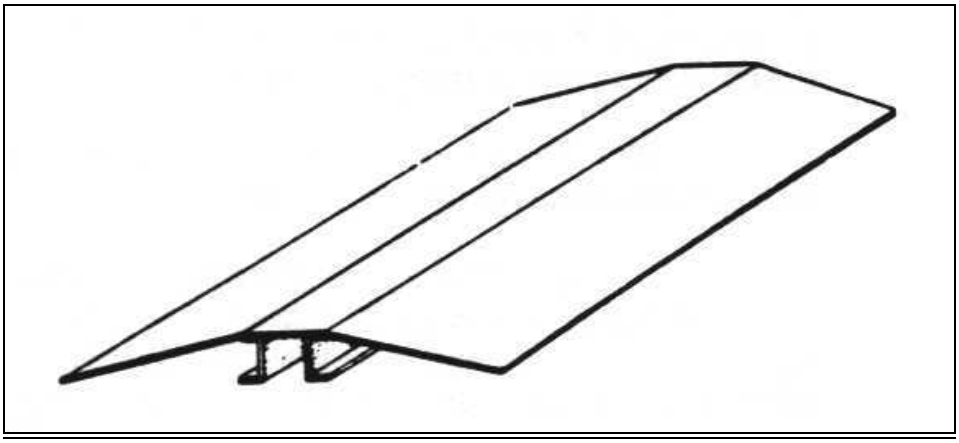
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)
(a) FIG NO.	(b) ITEM NO.	SMR	NSN	PART NO.	DESCRIPTION	QTY	UI	SOS
27		PDOOO	4520-01-493-7423	111739	Heater, Water, Electric, 9,000 Watts	12	EA	S9M

SECTION 2 – REPAIR PARTS LISTS
Hypochlorination Unit
Figure F-28

(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)
(a) FIG NO.	(b) ITEM NO.	SMR	NSN	PART NO.	DESCRIPTION	QTY	UI	SOS
28		PDOOO	4610-01-435-4884	WAL-1031-96	Hypochlorination Unit	1	EA	A12
28		PC—Z	6810-01-358-4336	13229E0923	Sodium Hypochlorinite Technical	6	BG	S9G

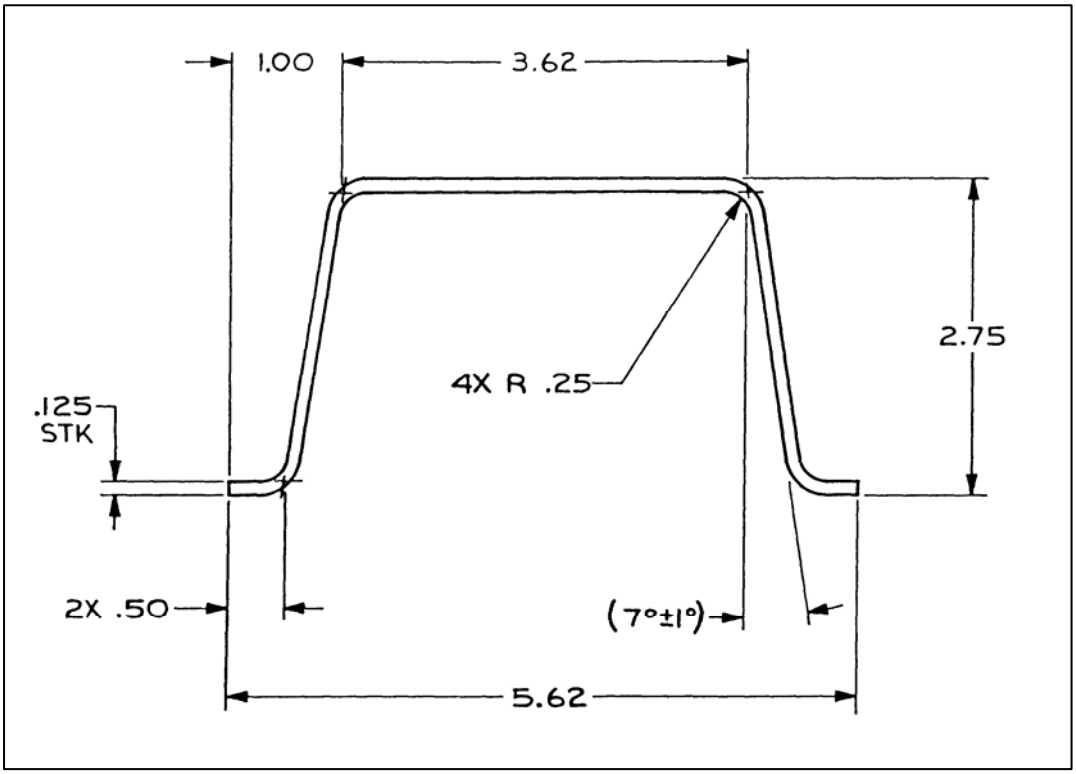
SECTION 2 – REPAIR PARTS LISTS
Channel. Hose Protector, Surface
Figure F-29

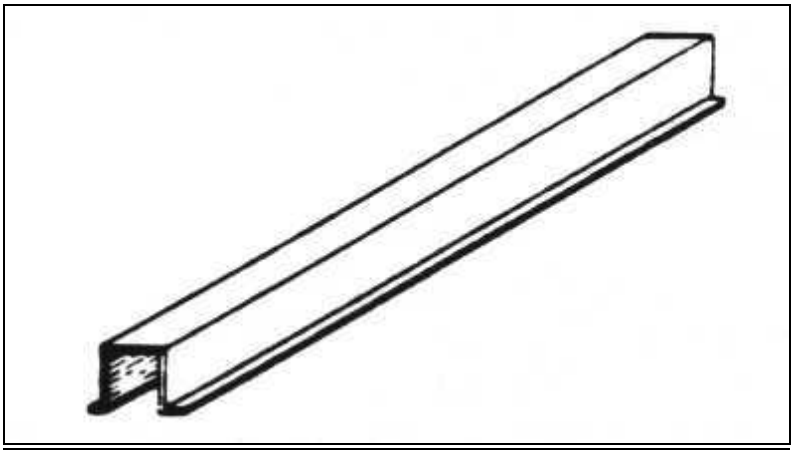




(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)
(a) FIG NO.	(b) ITEM NO.	SMR	NSN	PART NO.	DESCRIPTION	QTY	UI	SOS
29		PD--Z	4720-01-440-4925	13229E7176	Channel, Hose Protector, Surface	10	AY	S9C

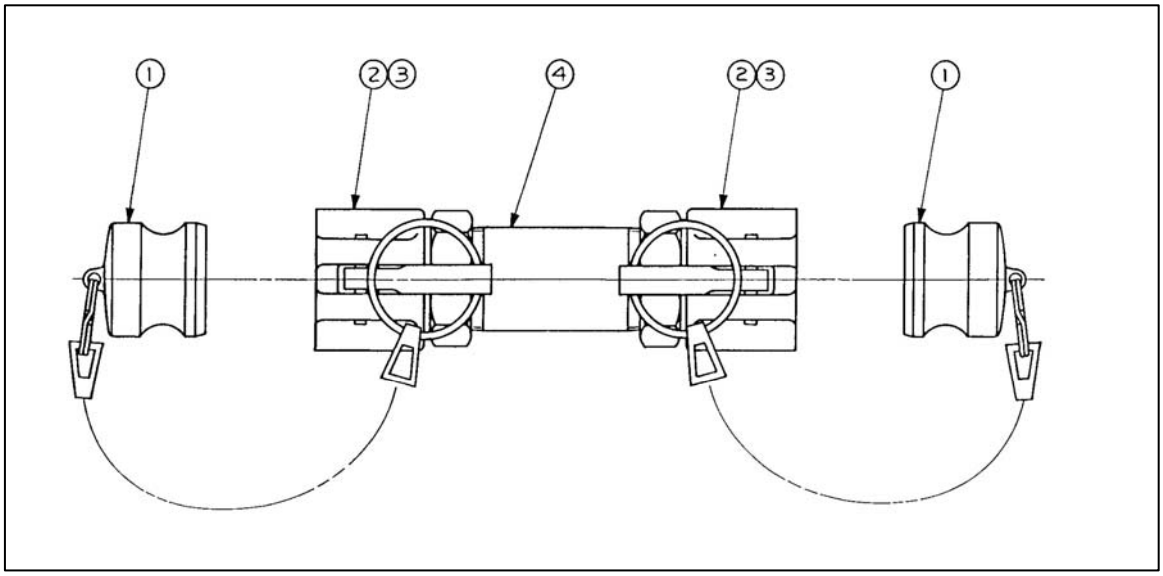
SECTION 2 – REPAIR PARTS LISTS
Channel. Hose Protector, Subsurface
Figure F-30





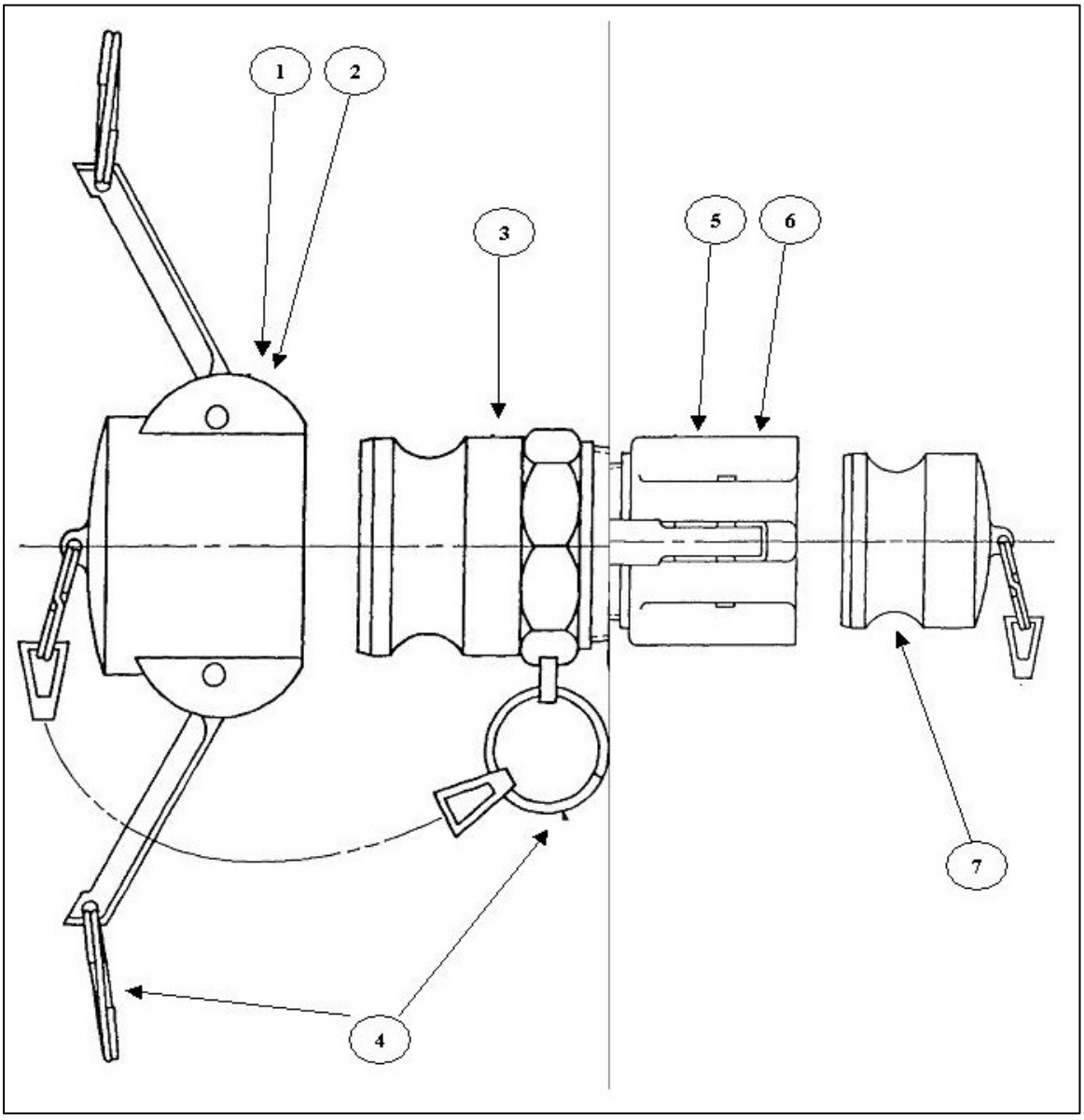
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)
(a) FIG NO.	(b) ITEM NO.	SMR	NSN	PART NO.	DESCRIPTION	QTY	UI	SOS
30		PD--Z	4720-01-440-4928	13229E7175	Channel, Hose Protector, Subsurface	5	AY	S9C

SECTION 2 – REPAIR PARTS LISTS
Coupling Assembly, Quick Disconnect
1-Inch Female x 1-Inch Female
Figure F-31



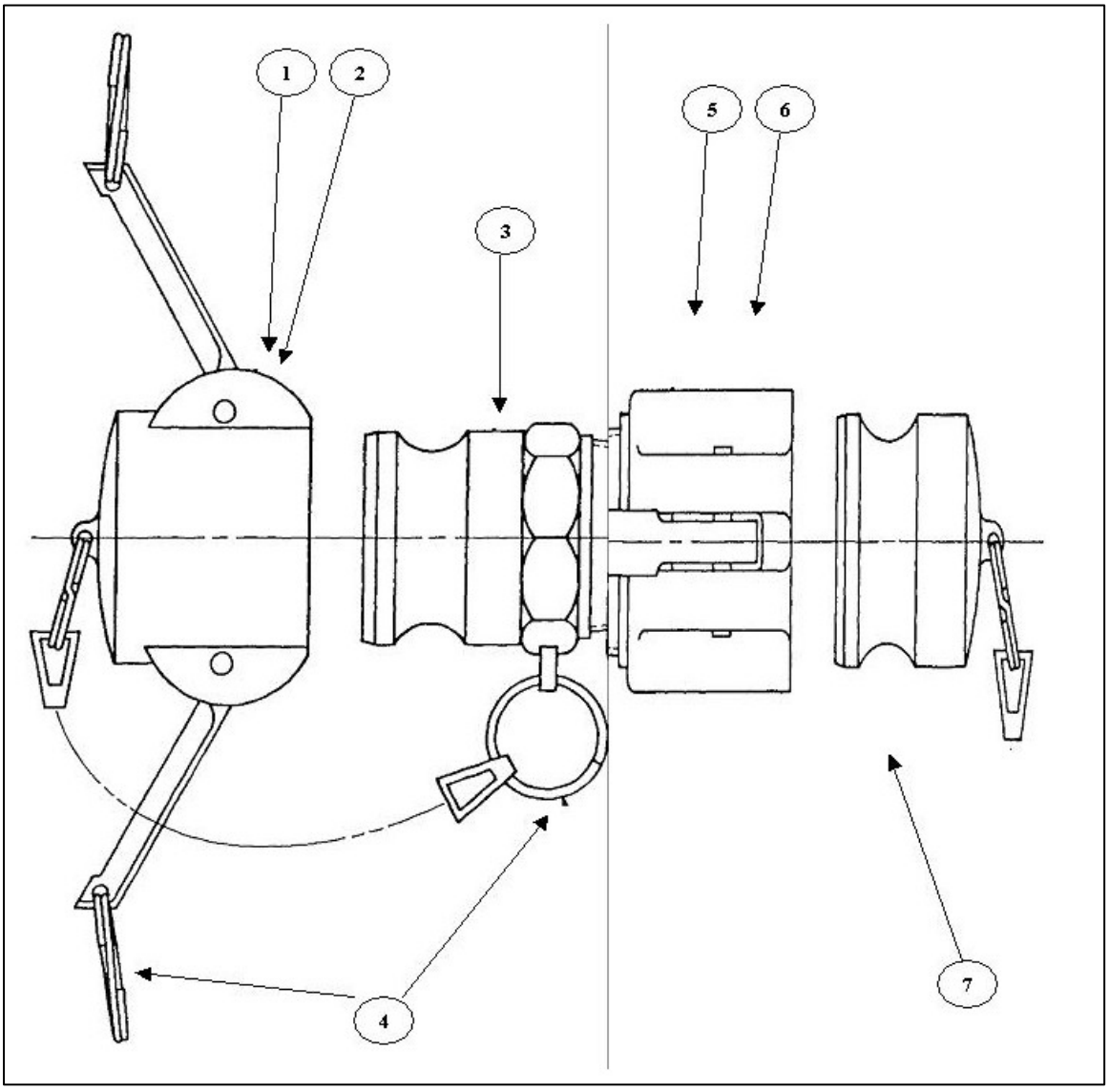
(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)
(a) FIG NO.	(b) ITEM NO.	SMR	NSN	PART NO.	DESCRIPTION	QTY	UI	SOS
31		PDOOO	4730-01-440-8569	13229E7173	Coupling Assembly, QD	1	EA	S9C
31	1	PDO--Z	4730-00-360-0715	MS27029-5	Plug, QD, 1”	2	EA	S9C
31	2	PDOOO	4730-00-042-5265	MS27024-5	Coupling Half, QD, 1”F with F NPT	2	EA	S9C
31	3	PAO-Z	5330-00-088-9167	MS27030-4	Gasket	2	EA	S9I
31	4	XA--Z			Pipe, 1” Threaded (Male)	1	EA	

SECTION 2 – REPAIR PARTS LISTS
Reducer, Quick Disconnect
1½-Inch Male to 1-Inch Female
Figure F-32



(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)
(a) FIG NO.	(b) ITEM NO.	SMR	NSN	PART NO.	DESCRIPTION	QTY	UI	SOS
32		PDOOO	4730-01-499-8752	3629	Reducer, QD, 1”F to 1 ½”M	1	EA	S9M
32	1	PDOOO	4730-00-869-5246	MS27028-9	Cap, QD 1 ½”	1	EA	S9C
32	2	PAO--Z	5330-00-360-0595	MS27030-5	Gasket 1-1/2”	1	EA	S9I
32	3	PDOOO	4730-00-360-0589	MS27022-9	Coupling Half, QD, 1-1/2”M with Male NPT	1	EA	S9C
32	4	PAO-Z	5325-00-926-5411	A-A-58092	Ring, Retaining	5	EA	S9I
32	5	PDO-Z	4730-00-360-0715	MS27029-5	Coupling Half, QD, 1-1/2”F with Female NPT	1	EA	S9C
32		PAO-Z	8030-00-889-3534	H01434M	Tape, Antiseizing	V	AR	GSA

SECTION 2 – REPAIR PARTS LISTS
Reducer, Quick Disconnect
1-Inch Male to 1½-Inch Female
Figure F-33



(1)		(2)	(3)	(4)	(5)	(6)	(7)	(8)
(a) FIG NO.	(b) ITEM NO.	SMR	NSN	PART NO.	DESCRIPTION	QTY	UI	SOS
33		PDOOO	4730-01-499-8787	3630	Reducer, QD, 1-1/2”F to 1”M	1	EA	S9M
33	1	PDOOO	4730-00-360-0791	MS27028-5	Cap, QD 1”	1	EA	S9C
33	2	PAO-Z	5330-00-089-9167	MS27030-4	Gasket 1”	1	EA	S9I
33	3	PDOOO	4730-00-084-7435	MS27022-5	Coupling Half, QD, 1”M with Male NPT	1	EA	S9C
33	4	PAO-Z	5325-00-926-5411	A-A-58092	Ring, Retaining	5	EA	S9I
33	5	PDO-Z	4730-00-980-9411	MS27024-9	Coupling Half, QD, 1-1/2”F with Female NPT	1	EA	S9C
33	6	PAO-Z	5330-00-360-0595	MS27030-5	Gasket, 1-1/2”	1	EA	S9I
33	7	PDOOO	4730-00-823-5316	MS27029-9	Plug, QD 1-1/2”	1	EA	S9C
33		PAO-Z	8030-00-889-3534	H01434M	Tape, Antiseizing	V	AR	GSA

APPENDIX G
ORGANIZATIONAL MAINTENANCE
REPAIR PARTS AND SPECIAL TOOLS LIST
WASTEWATER MANAGEMENT SET, HOSPITAL, DEPMEDS

SECTION 1. INTRODUCTION

G-1. Scope. This RPSTL lists and authorizes spares and repair parts; special tools; special test, measurement, and diagnostic equipment (TMDE); and other special support equipment required for the performance of organizational maintenance of the Water Distribution Set, Hospital, DEPMEDS.

G-2. General. In addition to Section 1, Introduction, this Repair Parts and Special Tools List is divided into the following sections:

a. Section 2 – Repair Parts List. A list of spares and repair parts authorized by this RPSTL for use in the performance of maintenance. The list also includes parts which must be removed for replacement of the authorized parts. Parts lists are composed of parts, with the components of each part listed in ascending figure and item number sequence. Bulk materials are listed by item name in FIG BULK at the end of the section.

b. Section 3 – Special Tools List. Not applicable.

c. Section 4 – Cross reference Indexes. Not applicable.

G-3. Explanation of Columns (Section 2).

a. FIG NO. (Column 1a). This column lists the number of the figure where the item is identified/located.

b. ITEM NO. (Column 1b). Indicates the number used to identify items called out in the illustration.

c. SMR Code.(Column 2).

(1) *Source Code* (2 positions). Codes are entered in the first and second positions of the SMR indicating the source for replacement purposes, i.e., procured and stocked, manufactured or assembled.

Code	Explanation
PA	Item procured and stocked for anticipated or known usage. Items are normally considered for replenishment.
PB	Item procured and stocked for insurance purposes because essentiality dictates that a quantity be available in the supply system.
PC	Item procured and stocked but is deteriorative in nature.
Code	**Explanation**
PD	Support item, excluding support equipment, procured for initial issue and stocked only for subsequent or additional initial issues. Not subject to automatic replenishment.

PE	End item and/or support equipment procured and stocked for initial issue for specific maintenance activities
PF	Support equipment which will not be stocked but which will be centrally procured on demand.
PG	Item procured and stocked to provide for sustained support for the life of the equipment. It is applied to an item that, because of probable discontinuance or shutdown of production facilities would prove uneconomical to reproduce at a later time.
PH	Item procured and stocked and has been identified to contain hazardous materiel, item requires recordation in the Hazardous Materiel Information System (HMIS) and a Materiel Safety Data Sheet (MSDS).
PR	End item and/or support item, terminal or obsolete and replaced. No longer authorized for procurement. On hand assets may be issued until exhausted. Then use replacement item.
PZ	Item terminal or obsolete with no replacement, discontinue use.
KD	An item contained in a depot overhaul/repair kit and not purchased separately. Depot kit defined as a kit that provided items required at the time of depot overhaul or repair.
KF	An item contained in a maintenance kit and not purchased separately. Maintenance kit defined as a kit that provides an item that can be replaced at organizational or intermediate levels of maintenance.
KB	Item included in both a depot overhaul/repair kit and a maintenance kit.
MO	Item to be manufactured or fabricated at organizational level.
MF	Item to be manufactured or fabricated at DS level.
MH	Item to be manufactured or fabricated at GS level.
MD	Item to be manufactured or fabricated at depot level.
AO	Item to be assembled at organizational level.
AF	Item to be assembled at DS level.
AH	Item to be assembled at GS level.
AD	Item to be assembled at depot level.
XA	Item is not procured or stocked because the requirements for the item will result in the replacement of the next higher assembly.
XB	Support item with low mortality rate, not procured or stocked.
XC	Installation drawing, diagram, instruction sheet, field service drawing, that is identified by manufacturer's part number.
XD	Support item with low mortality rate, not stocked. Local purchase or requisition through normal supply channels.

(2) *Maintenance Code* (2 positions).

(a) General. Maintenance codes are assigned to indicate the levels of maintenance authorized to USE, REMOVE, REPLACE, or REPAIR support items. The maintenance codes are entered in the third and fourth positions are as follows:

(b) USE (third position). This position will indicate the lowest maintenance level authorized to remove, replace and use the support item.

Code	Explanation
O	Support item is removed, replaced, used at the organizational level of maintenance.
F	Support item is removed, replaced, used at the DS level.

Code	Explanation
H	Support item is removed, replaced, used at the GS level.
K	Repairable item. Item is removed, replaced or used at contractor facility.
D	Item is removed, replaced or used at Depot level only.

(b) REPAIR (fourth position). This position will indicate whether the item is to be repaired and identifies the lowest maintenance level with the capabilities to perform complete repair. This code will only be used if the first position of the SMR code is "P". When a maintenance code is not used a date "-" sign will be entered.

Code	Explanation
O	Maintenance at the organizational level of maintenance.
F	Maintenance at the DS level.
H	Maintenance at the GS level.
K	Repairable item. Item is repaired at contractor facility.
D	Repair at Depot level only.

(3) *Recoverability Code* (1 position). Code entered in the fifth position indicates the desired disposition of the support item.

Code	Explanation
Z	Non-repairable item. When item becomes unserviceable, condemn and dispose of at authorized level.
O	Repairable item. When uneconomically repairable, condemn and dispose at organization level.
F	Repairable item. When uneconomically repairable, condemn and dispose at DS level.
H	Repairable item. When uneconomically repairable, condemn and dispose at GS level.
K	Repairable item. Condemnation and dispose at Contractor facility.
D	Repairable item. When beyond lower level repair capability, return to depot. Condemnation and disposal not authorized below depot level.
L	Repairable item. Condemnation and disposal not authorized below depot level.

d. NSN (Column 3). The National Stock Number which is used to identify the item.

e. PART NUMBER (Column 4). Indicates the primary number used by the manufacturer (individual, company, firm, corporation, or Government activity) that controls the design, specifications, standards, and inspection requirements to identify an item or range of items.

f. DESCRIPTION (Column 5). This column contains the following information:

(1) The Federal Item name and, when required, a minimum description to identify the item.

(2) Spare/repair parts that make up an assembled item are listed immediately following the assembled item line entry.

(3) Part numbers for bulk materials are references in this column in the line item entry for the item to be manufactured/fabricated.

(4) The usable on code. Not applicable.

g. QTY (Column 6). The QTY (quantity per figure column) indicates the quantity of the item used in the illustration figure. A "V" appearing in this column in lieu of a quantity indicates that the quantity is variable and quantity may vary from application to application.

h. UI (Column 7). The UI (Unit of Issue) indicates the unit of issue of the item used in the illustrated figure. A "AR" appearing in this column in lieu of a unit of issue indicates that the unit is as required and may vary from application to application.

i. SOS (Column 8). The SOS (Source of Supply) indicates the source from which the part may be ordered.

G-4. Explanation of Columns (Section 4). Not applicable.

G-5. Special Information. Not applicable.

G-6. How to Locate Repair Parts.

a. When NSN or Part Number is Not Known.

(1) First. Using the table of contents, determine the assembly group or subassembly group to which the item belongs. This is necessary since figures are prepared for assembly groups and subassembly groups, and listings are divided into the same groups.

(2) Second. Find the figure covering the assembly group of subassembly group to which the item belongs.

(3) Third. Identify the item on the figure and use the corresponding table to find the NSN or Part Number.

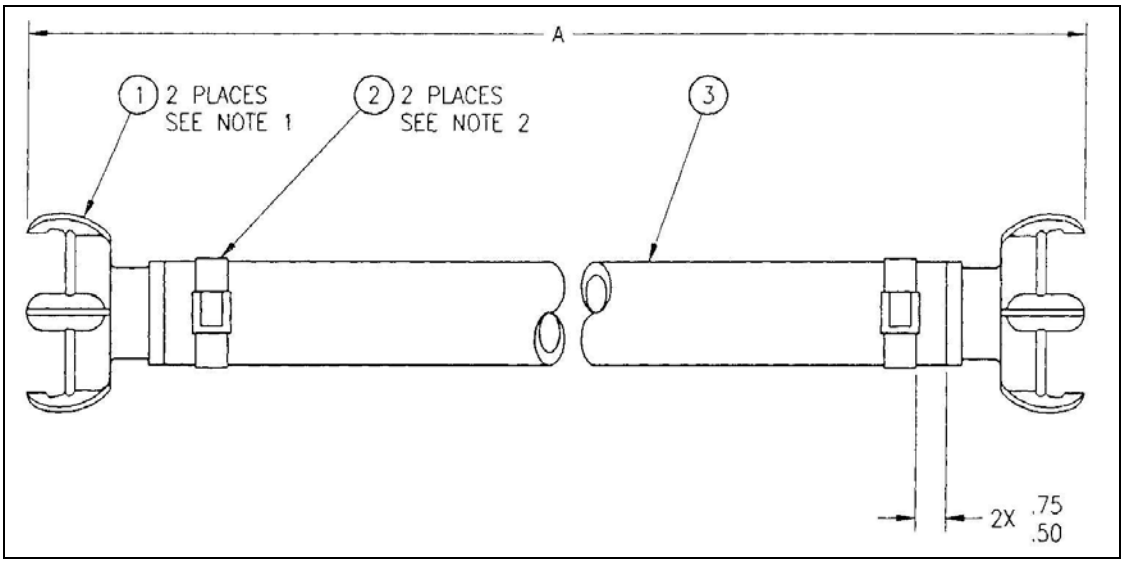
b. When NSN or Part Number is Known. Not applicable.

G-7. Abbreviations. Not applicable.

SECTION 2 – REPAIR PARTS LISTS
Cage, Wire, Folding
Figure G-1

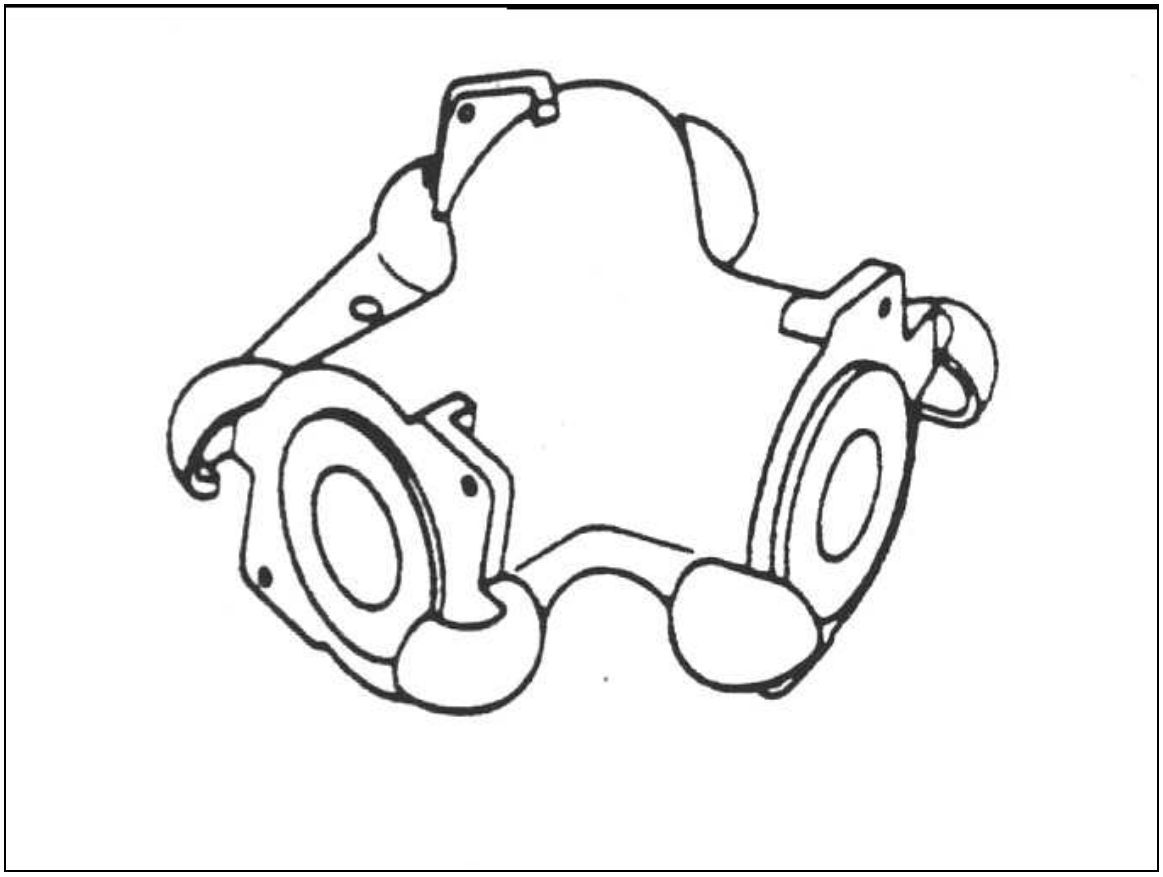
(1)								
(a) FIG NO.	(b) ITEM NO.	(2) SMR	(3) NSN	(4) PART NO.	(5) DESCRIPTION	(6) QTY	(7) UI	(8) SOS
1		PD--Z	3990-01-505-5922	W-2-404-836-SP-SJF	Cage, Wire Folding	1	EA	LP

SECTION 2 – REPAIR PARTS LISTS
Hose Assembly, Rubber
Figure G-2



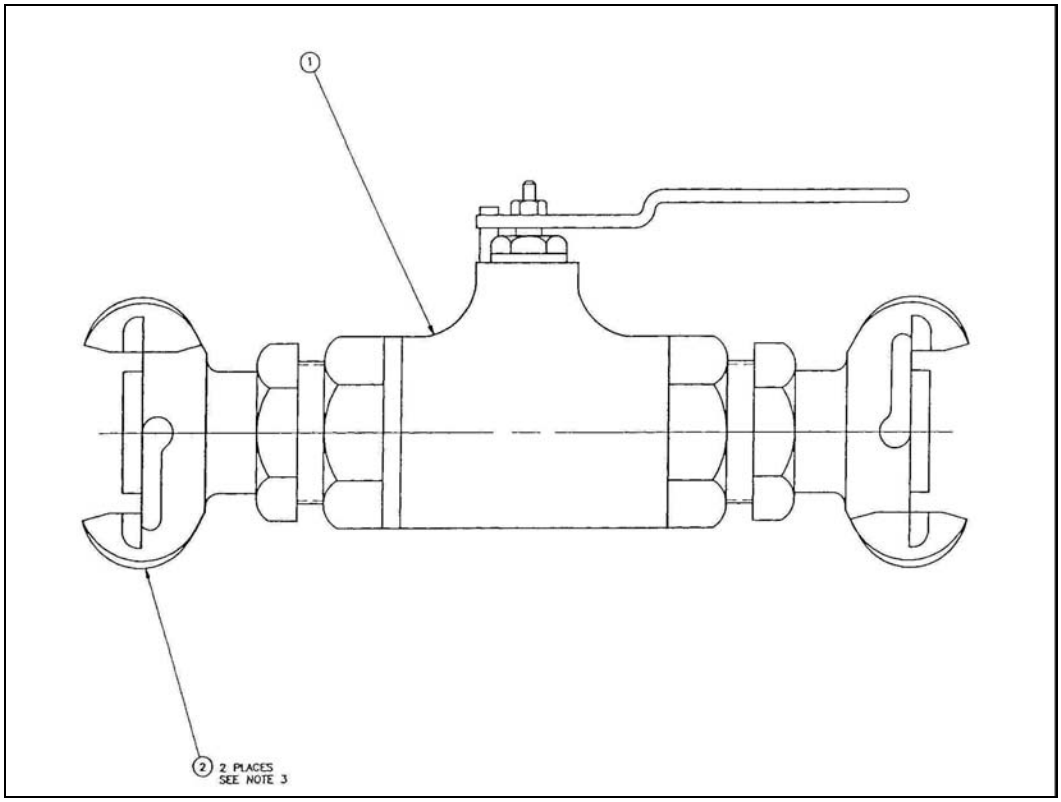
(1)								
(a) FIG NO.	(b) ITEM NO.	(2) SMR	(3) NSN	(4) PART NO.	(5) DESCRIPTION	(6) QTY	(7) UI	(8) SOS
2		PDOOO	4720-01-434-9638	13230E5746-4	Hose Assembly Rubber, 50 ft	1	EA	S9M
2	1	PDOOO	4730-00-948-1722	MS27025-9	Coupling Half, QD	2	EA	S9C
2	2	PAO-Z	4720-00-876-8903	J-409	Clamp Hose	2	EA	S9C
2	3	XA-Z			Hose, Rubber	50	FT	LP

SECTION 2 – REPAIR PARTS LISTS
Wye, Quick Disconnect
Figure G-3



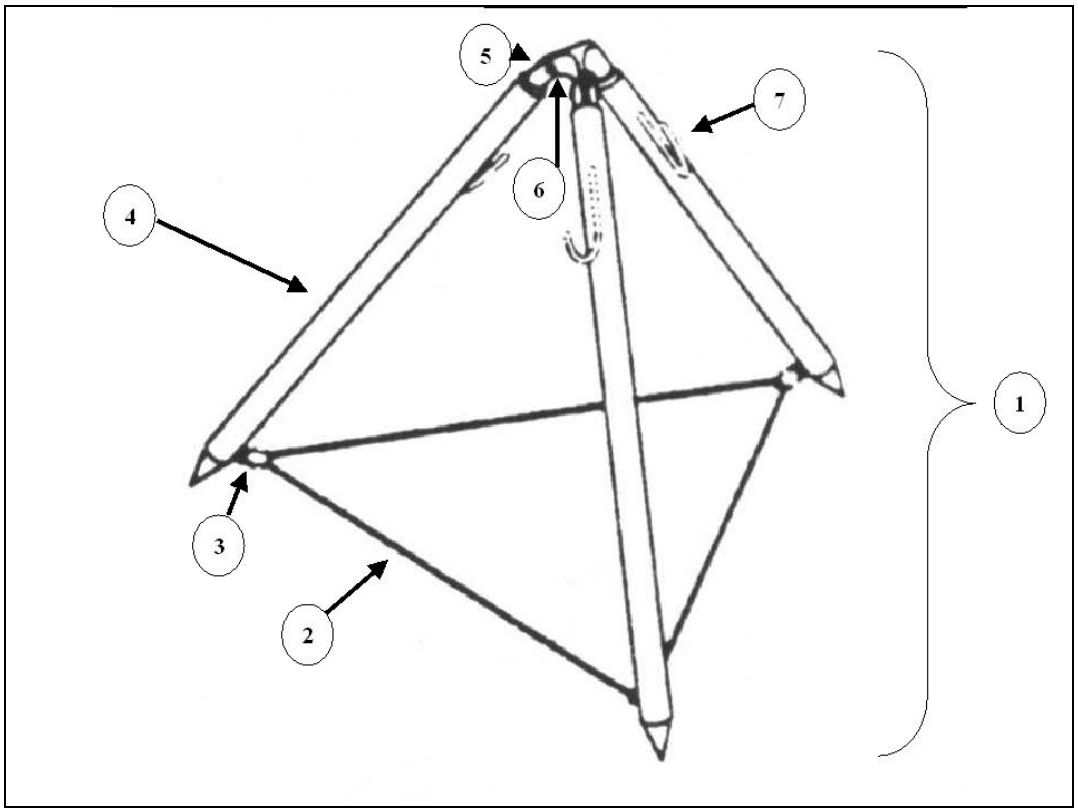
(1)								
(a) FIG NO.	(b) ITEM NO.	(2) SMR	(3) NSN	(4) PART NO.	(5) DESCRIPTION	(6) QTY	(7) UI	(8) SOS
3		PA--Z	4730-00-496-5952	AM-10	Wye, QD	1	EA	S9C

SECTION 2 – REPAIR PARTS LISTS
Valve, Ball
Figure G-4



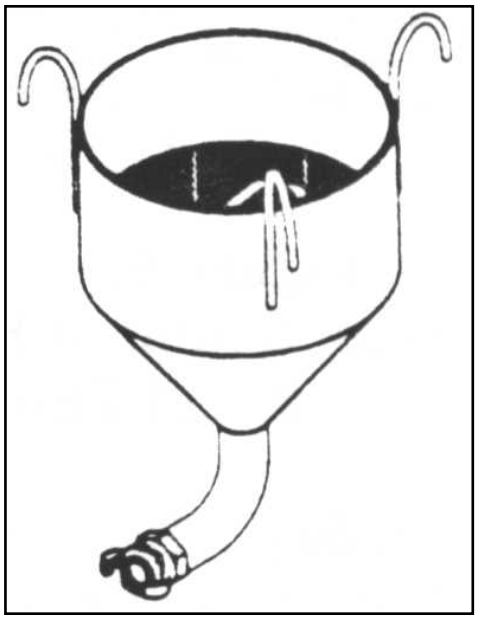
(1)								
(a) FIG NO.	(b) ITEM NO.	(2) SMR	(3) NSN	(4) PART NO.	(5) DESCRIPTION	(6) QTY	(7) UI	(8) SOS
4		PDOOO	4820-01-440-5916	13225E7225	Valve Assembly, Ball	1	EA	S9C
4	1	PA--Z	4820-01-163-1071	WW-C-35	Valve, Ball	1	EA	S9C
4	2	PDOOO	4730-01-279-4568	WW-C-633	Coupling Half, QD	2	EA	S9C
4		PAO-Z	8030-00-889-3534	H01434M	Tape, Antiseizing	V	AR	GSA

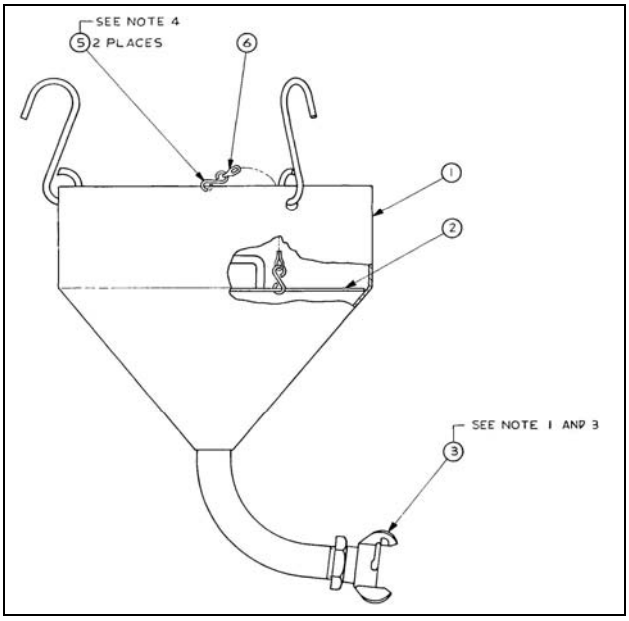
SECTION 2 – REPAIR PARTS LISTS
Stand Assembly, Distribution Nozzle
Figure G-5



(1)								
(a) FIG NO.	(b) ITEM NO.	(2) SMR	(3) NSN	(4) PART NO.	(5) DESCRIPTION	(6) QTY	(7) UI	(8) SOS
5		PDOOO	4930-01-120-7426	13225E9140	Stand Assembly	1	EA	S9I

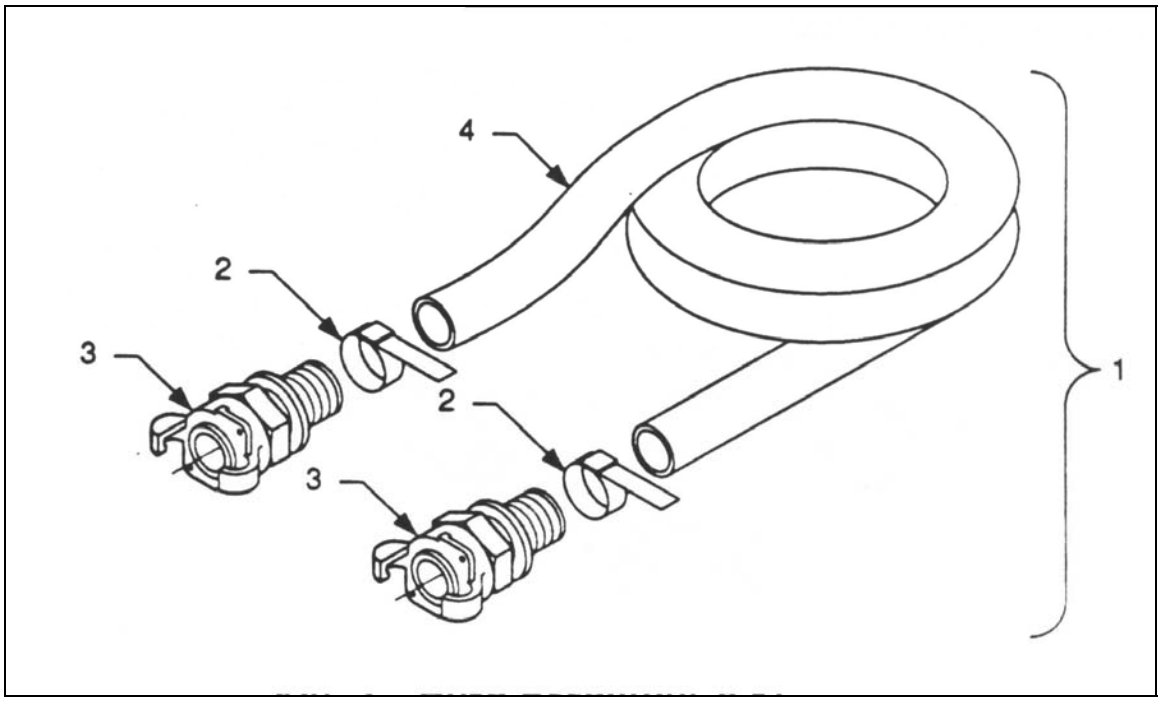
SECTION 2 – REPAIR PARTS LISTS
Funnel Assembly
Figure G-6





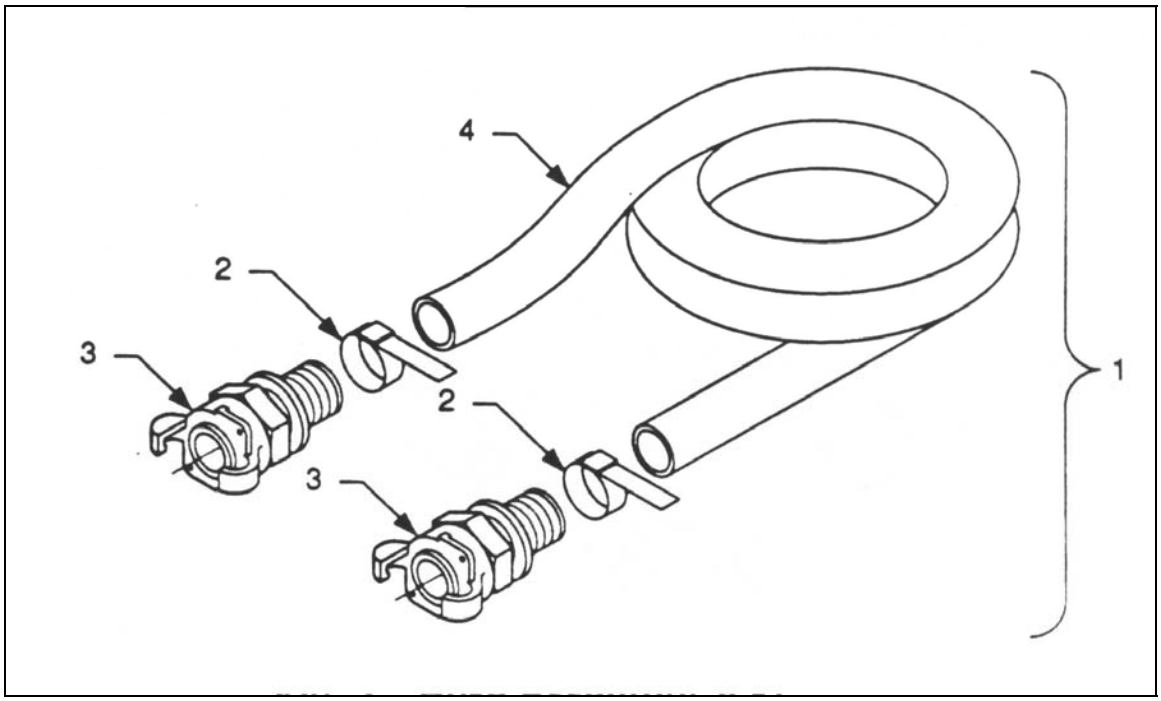
(1)								
(a) FIG NO.	(b) ITEM NO.	(2) SMR	(3) NSN	(4) PART NO.	(5) DESCRIPTION	(6) QTY	(7) UI	(8) SOS
6		PDOOO	6545-01-434-9687	13229E7229	Funnel Assembly	1	EA	RI
6	1	PD--Z		13229E7227	Funnel	1	EA	RI
6	2	PD—Z		13229E7228	Screen, Funnel	1	EA	RI
6	3	PDOOO	4730-00-279-4568	W-W-C-633	Coupling Half, QD	1	EA	S9C
6	4	PAO-Z	8030-00-889-3534	H01434M	Tape, Antiseizing	V	AR	GSA
6	5	PAO-Z	4030-00-780-9350	MS87006-13	Hook, Chain	3	EA	S9C
6	6	PAO-Z	4010-00-228-9948	RR-C-271	Chain, Weldless	2	EA	39G

SECTION 2 – REPAIR PARTS LISTS
Hose Assembly, Rubber
1-Inch x 5-Feet
Figure G-7



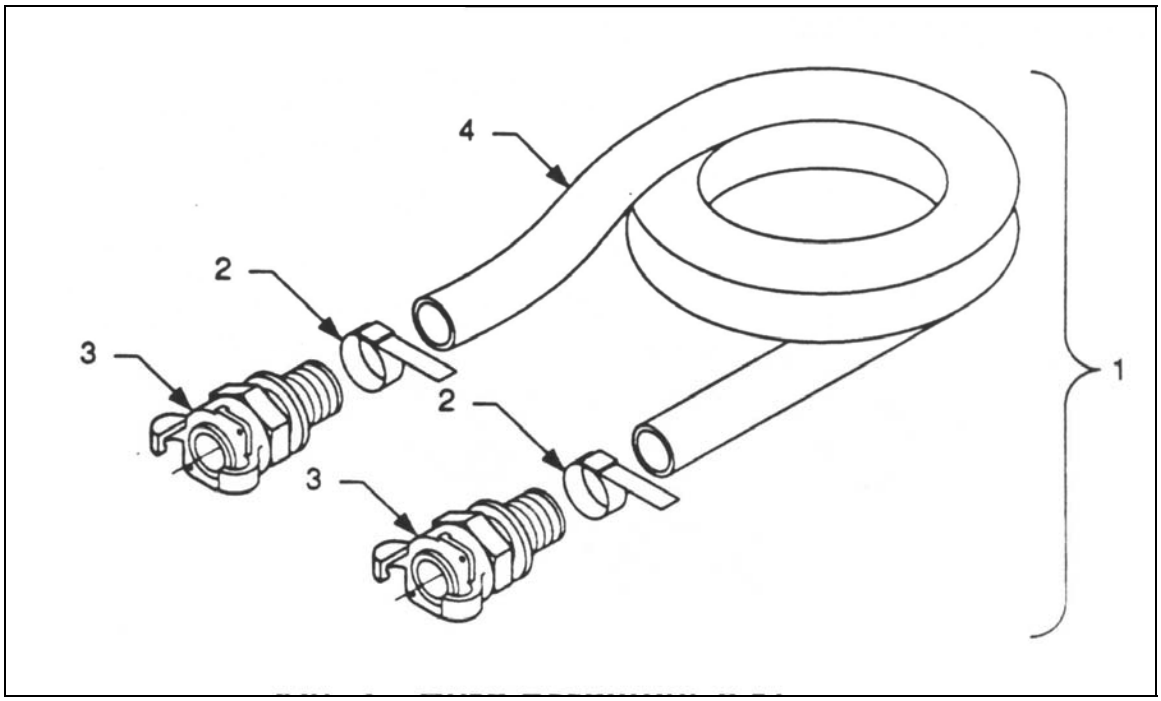
(1)								
(a) FIG NO.	(b) ITEM NO.	(2) SMR	(3) NSN	(4) PART NO.	(5) DESCRIPTION	(6) QTY	(7) UI	(8) SOS
7	1	PDOOO	4720-01-434-9594	13229E7223-2	Hose Assembly, Rubber , 5 FT	1	EA	S9M
7	2	XA—Z	4730-00-496-5953	WWC663-05-M	Coupling Half, QD	2	EA	S9C
7	3	PAO-Z	4730-01-007-9254	J-409	Clamp, Hose	2	EA	S9C
7	4	XA-Z	4720-00-200-0367	ZZH601-3-1-16	Hose, Nonmetallic	5	FT	S9C

SECTION 2 – REPAIR PARTS LISTS
Hose Assembly, Rubber
1-Inch x 20-Feet
Figure G-8



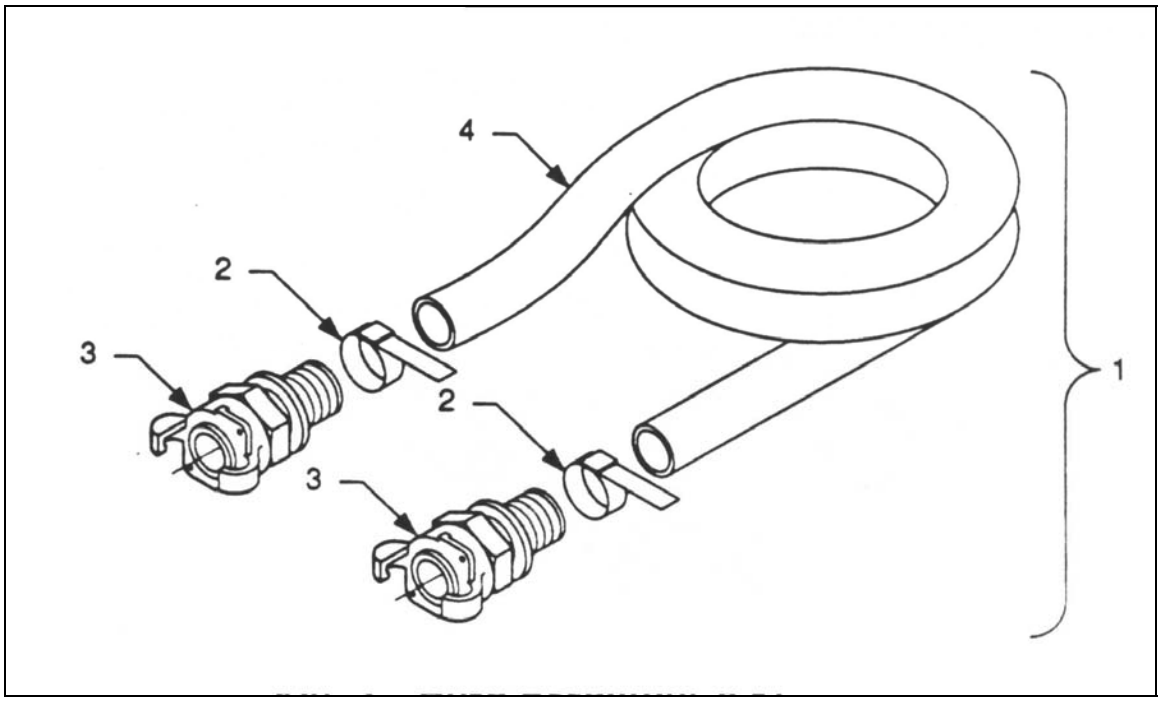
(1)								
(a) FIG NO.	(b) ITEM NO.	(2) SMR	(3) NSN	(4) PART NO.	(5) DESCRIPTION	(6) QTY	(7) UI	(8) SOS
8	1	PDOOO	4720-01-434-9605	13229E7223-2	Hose Assembly, Rubber , 20 FT	1	EA	S9M
8	2	XA—Z	4730-00-496-5953	WWC663-05-M	Coupling Half, QD	2	EA	S9C
8	3	PAO-Z	4730-01-007-9254	J-409	Clamp, Hose	2	EA	S9C
8	4	XA-Z	4720-00-200-0367	ZZH601-3-1-16	Hose, Nonmetallic	20	FT	S9C

SECTION 2 – REPAIR PARTS LISTS
Hose Assembly, Rubber
1-Inch x 10-Feet
Figure G-9



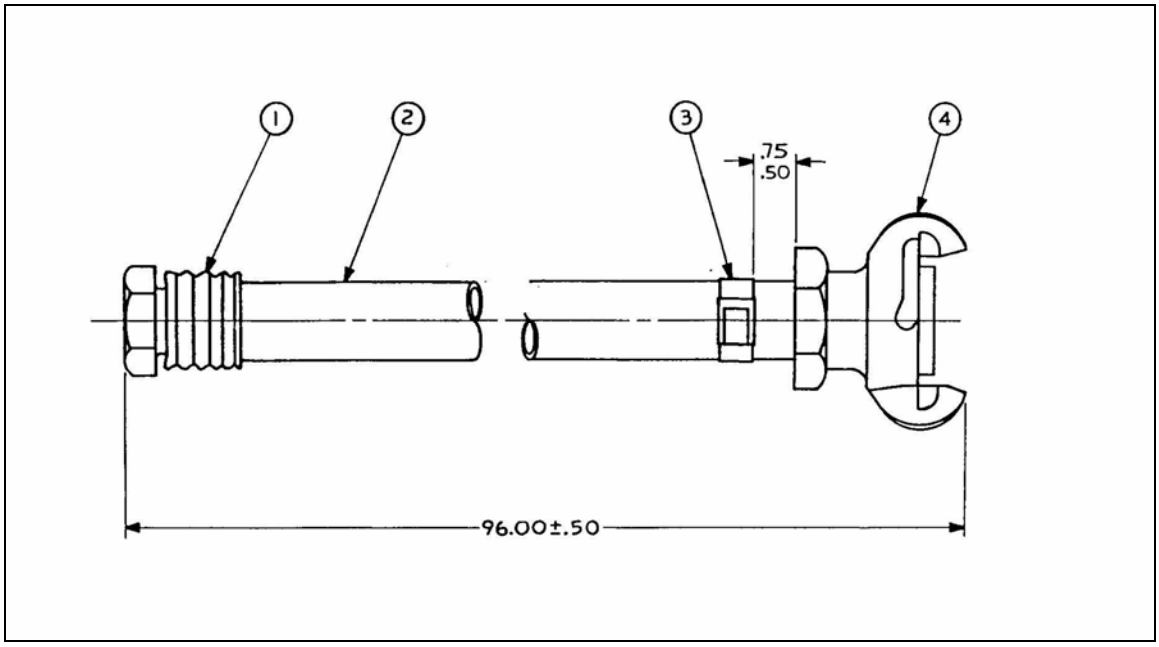
(1)								
(a) FIG NO.	(b) ITEM NO.	(2) SMR	(3) NSN	(4) PART NO.	(5) DESCRIPTION	(6) QTY	(7) UI	(8) SOS
9	1	PDOOO	4720-01-434-9646	13229E7223-1	Hose Assembly, Rubber , 10 FT	1	EA	S9M
9	2	XA—Z	4730-00-496-5953	WWC663-05-M	Coupling Half, QD	2	EA	S9C
9	3	PAO-Z	4730-01-007-9254	J-409	Clamp, Hose	2	EA	S9C
9	4	XA-Z	4720-00-200-0367	ZZH601-3-1-16	Hose, Nonmetallic	10	FT	S9C

SECTION 2 – REPAIR PARTS LISTS
Hose Assembly, Rubber
1-Inch x 50-Feet
Figure G-10



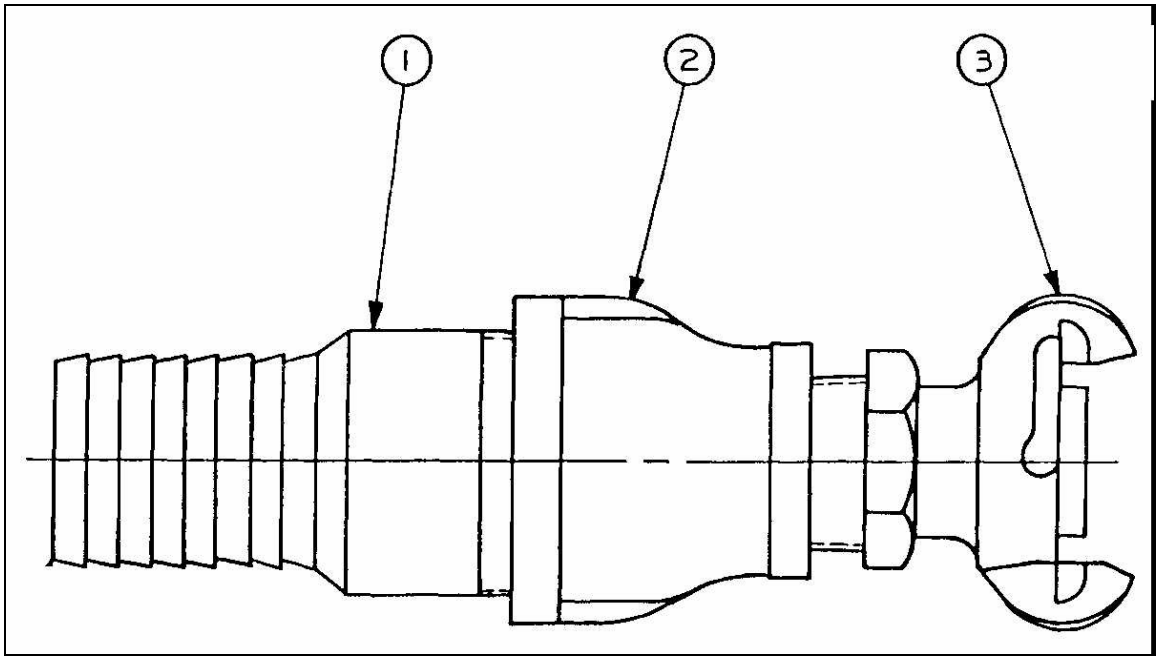
(1)								
(a) FIG NO.	(b) ITEM NO.	(2) SMR	(3) NSN	(4) PART NO.	(5) DESCRIPTION	(6) QTY	(7) UI	(8) SOS
10	1	PDOOO	4720-01-434-9649	13229E7223-4	Hose Assembly, Rubber , 50 FT	1	EA	S9M
10	2	XA—Z	4730-00-496-5953	WWC663-05-M	Coupling Half, QD	2	EA	S9C
10	3	PAO-Z	4730-01-007-9254	J-409	Clamp, Hose	2	EA	S9C
10	4	XA-Z	4720-00-200-0367	ZZH601-3-1-16	Hose, Nonmetallic	50	FT	S9C

SECTION 2 – REPAIR PARTS LISTS
Hose Assembly, Rubber
Figure G-11



(1)								
(a) FIG NO.	(b) ITEM NO.	(2) SMR	(3) NSN	(4) PART NO.	(5) DESCRIPTION	(6) QTY	(7) UI	(8) SOS
11	1	PDOOO	4720-01-434-9627	13229E7226	Hose Assembly, Rubber , 10 FT	1	EA	S9M
11	2	PAO-Z	4730-01-280-8542	NH99670410524	Clamp, Hose	2	EA	S9C
11	3	XA-Z		WWC624-2G-6-06	Coupling Assembly, Hose	1	EA	
11	4	XA-Z		WWC633-04-M	Coupling Half, QD	1	EA	
11		XA-Z		ZZH601-3-1-12-8	Hose, Nonmetallic	10	FT	

SECTION 2 – REPAIR PARTS LISTS
Hamilton Sink Adapter
Figure G-12



(1)								
(a) FIG NO.	(b) ITEM NO.	(2) SMR	(3) NSN	(4) PART NO.	(5) DESCRIPTION	(6) QTY	(7) UI	(8) SOS
12		PDOOO	6545-01-434-9630	13229E7224	Adapter, Sink	1	EA	S9M
12	1	PD—Z	4730-01-371-2595	BST-30	Adapter, Straight, Pipe to Hose	1	EA	S9C
12	2	PD—Z	4730-00-057-2971	ANSI B16.3	Elbow, Pipe	1	EA	S9C
12	3	PD—Z	4730-01-222-0943	WWC693-15-M	Coupling, Half, QD	1	EA	S9C
12		PAO-Z	8030-00-889-3534	H01434M	Tape, Antiseizing	V	AR	GSA

APPENDIX H
ORGANIZATIONAL MAINTENANCE
REPAIR PARTS AND SPECIAL TOOLS LIST
PUMP, CENTRIFUGAL: FRAME MOUNTED, 1½-INCH
ELECTRIC MOTOR DRIVEN
Modified Grainger Model 4XZ11 Pump
NSN: 4320-01-506-4459

SECTION 1. INTRODUCTION

H-1. Scope. This RPSTL lists and authorizes spares and repair parts; special tools; special test, measurement, and diagnostic equipment (TMDE); and other special support equipment required for the performance of organizational maintenance of the modified Pump, Centrifugal.

H-2. General. In addition to Section 1, Introduction, this Repair Parts and Special Tools List is divided into the following sections:

a. Section 2 – Repair Parts List. A list of spares and repair parts authorized by this RPSTL for use in the performance of maintenance. The list also includes parts which must be removed for replacement of the authorized parts. Parts lists are composed of parts, with the components of each part listed in ascending figure and item number sequence. Bulk materials are listed by item name in FIG BULK at the end of the section.

b. Section 3 – Special Tools List. Not applicable.

c. Section 4 – Cross reference Indexes. Not applicable.

H-3. Explanation of Columns (Section 2).

a. FIG NO. (Column 1a). This column lists the number of the figure Where the item is identified/located.

b. ITEM NO. (Column 1b). Indicates the number used to identify Items called out in the illustration.

c. SMR Code.(Column 2).

(1) *Source Code* (2 positions). Codes are entered in the first and second positions of the SMR indicating the source for replacement purposes, i.e., procured and stocked, manufactured or assembled.

Code	Explanation
PA	Item procured and stocked for anticipated or known usage. Items are normally considered for replenishment.
PB	Item procured and stocked for insurance purposes because essentiality dictates that a quantity be available in the supply system.
PC	Item procured and stocked but is deteriorative in nature.

PD	Support item, excluding support equipment, procured for initial issue and stocked only for subsequent or additional initial issues. Not subject to automatic replenishment.
PE	End item and/or support equipment procured and stocked for initial issue for specific maintenance activities
PF	Support equipment which will not be stocked but which will be centrally procured on demand.
PG	Item procured and stocked to provide for sustained support for the life of the equipment. It is applied to an item that, because of probable discontinuance or shutdown of production facilities would prove uneconomical to reproduce at a later time.
PH	Item procured and stocked and has been identified to contain hazardous materiel, item requires recordation in the Hazardous Materiel Information System (HMIS) and a Materiel Safety Data Sheet (MSDS).
PR	End item and/or support item, terminal or obsolete and replaced. No longer authorized for procurement. On hand assets may be issued until exhausted. Then use replacement item.
PZ	Item terminal or obsolete with no replacement, discontinue use.
KD	An item contained in a depot overhaul/repair kit and not purchased separately. Depot kit defined as a kit that provided items required at the time of depot overhaul or repair.
KF	An item contained in a maintenance kit and not purchased separately. Maintenance kit defined as a kit that provides an item that can be replaced at organizational or intermediate levels of maintenance.
KB	Item included in both a depot overhaul/repair kit and a maintenance kit.
MO	Item to be manufactured or fabricated at organizational level.
MF	Item to be manufactured or fabricated at DS level.
MH	Item to be manufactured or fabricated at GS level.
MD	Item to be manufactured or fabricated at depot level.
AO	Item to be assembled at organizational level.
AF	Item to be assembled at DS level.
AH	Item to be assembled at GS level.
AD	Item to be assembled at depot level.
XA	Item is not procured or stocked because the requirements for the item will result in the replacement of the next higher assembly.
XB	Support item with low mortality rate, not procured or stocked.
XC	Installation drawing, diagram, instruction sheet, field service drawing, that is identified by manufacturer's part number.
XD	Support item with low mortality rate, not stocked. Local purchase or requisition through normal supply channels.

(2) *Maintenance Code* (2 positions).

(a) General. Maintenance codes are assigned to indicate the levels of maintenance authorized to USE, REMOVE, REPLACE, or REPAIR support items. The maintenance codes are entered in the third and fourth positions are as follows:

(b) USE (third position). This position will indicate the lowest maintenance level authorized to remove, replace and use the support item.

Code	Explanation
O	Support item is removed, replaced, used at the organizational level of maintenance.
F	Support item is removed, replaced, used at the DS level.

Code	Explanation
H	Support item is removed, replaced, used at the GS level.
K	Repairable item. Item is removed, replaced or used at contractor facility.
D	Item is removed, replaced or used at Depot level only.

(b) REPAIR (fourth position). This position will indicate whether the item is to be repaired and identifies the lowest maintenance level with the capabilities to perform complete repair. This code will only be used if the first position of the SMR code is "P". When a maintenance code is not used a date "-" sign will be entered.

Code	Explanation
O	Maintenance at the organizational level of maintenance.
F	Maintenance at the DS level.
H	Maintenance at the GS level.
K	Repairable item. Item is repaired at contractor facility.
D	Repair at Depot level only.

(3) *Recoverability Code* (1 position). Code entered in the fifth position indicates the desired disposition of the support item.

Code	Explanation
Z	Non-repairable item. When item becomes unserviceable, condemn and dispose of at authorized level.
O	Repairable item. When uneconomically repairable, condemn and dispose at organization level.
F	Repairable item. When uneconomically repairable, condemn and dispose at DS level.
H	Repairable item. When uneconomically repairable, condemn and dispose at GS level.
K	Repairable item. Condemnation and dispose at Contractor facility.
D	Repairable item. When beyond lower level repair capability, return to depot. Condemnation and disposal not authorized below depot level.
L	Repairable item. Condemnation and disposal not authorized below depot level.

d. NSN (Column 3). The National Stock Number which is used to identify the item.

e. PART NUMBER (Column 4). Indicates the primary number used by the manufacturer (individual, company, firm, corporation, or Government activity) that controls the design, specifications, standards, and inspection requirements to identify an item or range of items.

f. DESCRIPTION (Column 5). This column contains the following information:

(1) The Federal Item name and, when required, a minimum description to identify the item.

(2) Spare/repair parts that make up an assembled item are listed immediately following the assembled item line entry.

(3) Part numbers for bulk materials are references in this column in the line item entry for the item to be manufactured/fabricated.

(4) The usable on code. Not applicable.

g. QTY (Column 6). The QTY (quantity per figure column) indicates the quantity of the item used in the illustration figure. A "V" appearing in this column in lieu of a quantity indicates that the quantity is variable and quantity may vary from application to application.

h. UI (Column 7). The UI (Unit of Issue) indicates the unit of issue of the item used in the illustrated figure. A "AR" appearing in this column in lieu of a unit of issue indicates that the unit is as required and may vary from application to application.

i. SOS (Column 8). The SOS (Source of Supply) indicates the source from which the part may be ordered.

H-4. Explanation of Columns (Section 4). Not applicable.

H-5. Special Information. Not applicable.

H-6. How to Locate Repair Parts.

a. When NSN or Part Number is Not Known.

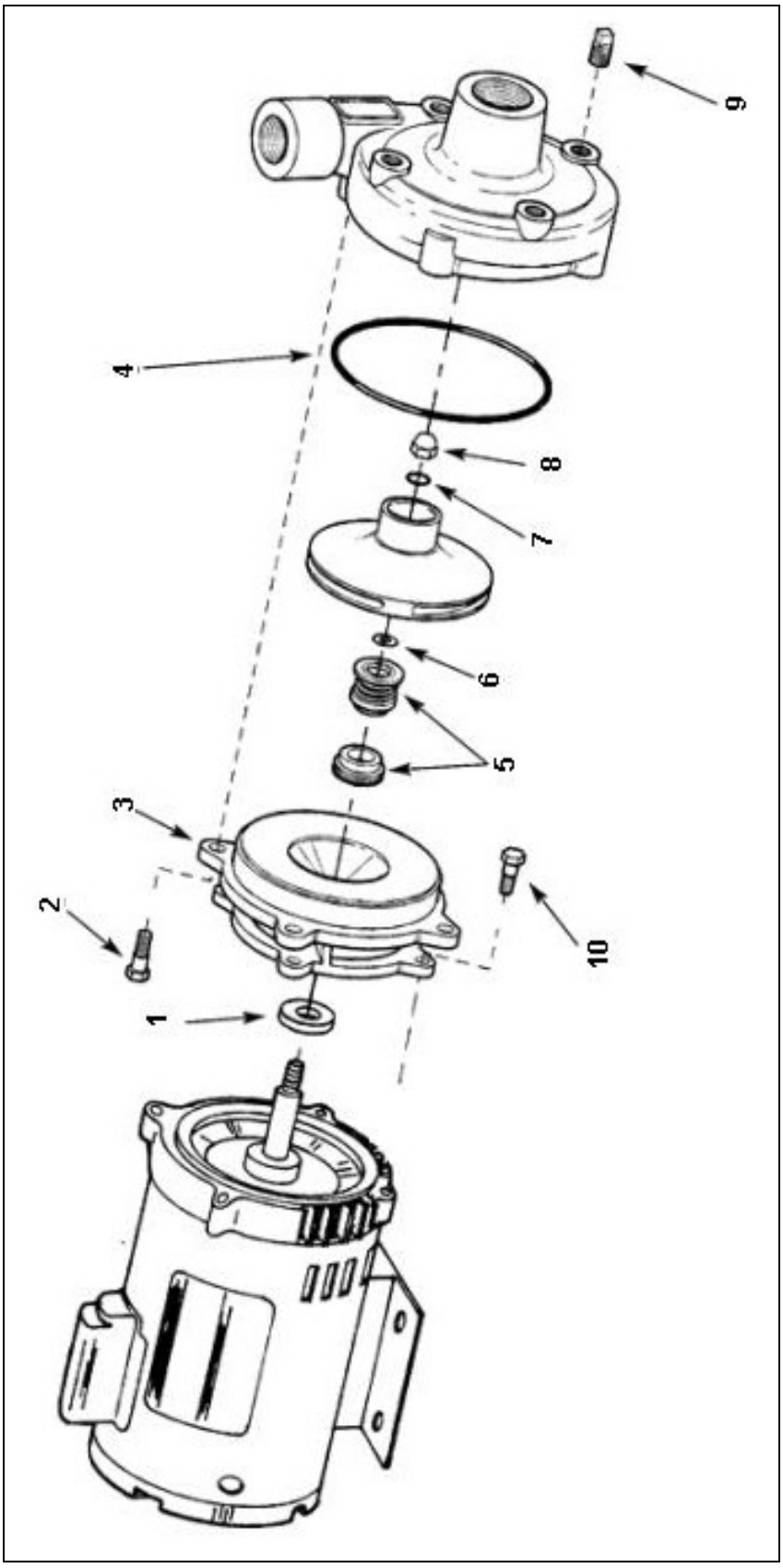
(1) First. Using the table of contents, determine the assembly group or subassembly group to which the item belongs. This is necessary since figures are prepared for assembly groups and subassembly groups, and listings are divided into the same groups.

(2) Second. Find the figure covering the assembly group of Subassembly group to which the item belongs.

(3) Third. Identify the item on the figure and use the corresponding table to find the NSN or Part Number.

b. When NSN or Part Number is Known. Not applicable.

H-7. Abbreviations. Not applicable.


9
4
8
7
6
5
3
2
10
1

(1)		(2)	(3)		(4)	(5)	(6)	(7)	(8)
(a)	(b)								
FIG	ITEM		NSN						
NO.	NO.	SMR	FSC	NIIN	PART NO.	DESCRIPTION	QTY	UI	SOS
1	1	XBF-Z	5310	01-506-3691	1534-000-00	Washer, Blank	1	EA	S9M
1	2	XBF-Z	5305	01-506-3683	1755-001-00	Screw, Cap, Hexagon Head	1	EA	S9M
1	3	XBF-Z	4730	01-506-4207	4900-031-09	Adapter, Machine, Centrifugal	1	EA	S9M
1	4	XBF-Z	5331	01-506-3674	2119-013-00	O-Ring	1	EA	S9M
1	5	XBF-Z	5330	01-506-3567	1640-161-97	Seal, Plain	1	EA	S9M
1	6	XBF-Z	5365	01-506-3452	1806-044-90	Shim Set	1	SE	S9M
1	7	XBF-Z	5331	01-506-3332	2105-037-00	O-Ring	1	EA	S9M
1	8	XBF-Z	5310	01-506-3315	1784-001-00	Nut, Plain, Cap	1	EA	S9M
1	9	XBF-Z	4730	01-506-3286	1768-008-00	Plug, Pipe	1	EA	S9M
1	10	XBF-Z	5305	01-506-3264	1754-001-00	Screw, Cap, Hexagon Head	1	EA	S9M